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WITH

**EXTENSIVE ALTERATIONS AND ADDITIONS, BROUGHT DOWN
TO THE PRESENT TIME.**

LONDON:

EFFINGHAM WILSON, ROYAL EXCHANGE.

1861.

PREFACE.

In the present Edition will be found an account of the New Moneys of Turkey, Austria, the Zoll-Verein States, Tuscany, Lombardy, and Sweden, with the new division of the Weights and Measures of the latter kingdom. The account of late Moneys has been retained, as they are still legally in use. The quotations of the Courses of Exchange are always made in the New Moneys.

The English Equivalents of the French Weights have been made to agree with the Report of Professor Miller, and the Commissioners This makes no difference in the arbitrated pars of Exchange in Gold, as the retenue, or charge for coining, is greater than formerly it makes, however, some difference with regard to Silver, the retenue for which has been decreased.

I have to thank many Gentlemen who have kindly given me assistance respecting the Moneys, &c., of various countries, and shall always esteem any information on the subjects of which this book treats as a favour.

<div align="right">W. TATE.</div>

5 *Warnford Court,*
     January, 1861.

N B.—During the period this Edition was at press, the Austrian Government have determined to issue paper Notes for 5 and 10 kreuzers, the old 6-kreuzer pieces having disappeared

In page 209, add, " The retenue for Silver is fixed at 1 franc 60 centimes, making the price 198,50 francs per kilogramme." In Arbitrated Pars of Exchange, Frankfort, pages 245 and 246, instead of " 3609 grains, the weight of the Mark," use " 7716 grains, the weight of the Zoll-Verein Pound." The price of course must be made to correspond with the quotations in the Exchange Lists.

In page 26 there are two most useful Tables for giving the valuations of the Pound Sterling, at various rates of Exchange, of the Kilogramme, with corresponding prices per lb. and per cwt., and of the Hectolitre, with the gallon and quarter. Thus—

<div align="center">

At 1 Franc per Kilogramme.

Exchange $25 \cdot 00$ = 40s. $7\frac{1}{2}d$. per cwt.

„ $25 \cdot 50$ = 39s. 10d.   „

</div>

These are valuable now, on account of the new Commercial Treaty.

CONTENTS

PART I.

EXCHANGE OPERATIONS.

DIRECT EXCHANGES.

CROSS EXCHANGES.

INDIRECT EXCHANGES.

SIMPLE ARBITRATIONS.

FOREIGN EXCHANGES.

FOREIGN Exchanges are transfers from the money of account of one country to that of another, by the operation of Bills of Exchange.

A Bill of Exchange is a written order for the payment of a specified amount of money.

A Rate of Exchange is the price of the money of one country reckoned in that of another country. Of the two terms of the rate, one is a fixed or invariable, and the other is an uncertain or variable, price. Thus between London and Paris, the rate of exchange is the value which is given for the £ Sterling, in a variable sum in Francs and Cents. The former sum is therefore the fixed price, and the latter the variable or uncertain price. Also between London and Lisbon, the rate of exchange is the value in Pence Sterling which is given for the Milreis, and therefore in this rate the Sterling money is the variable price.

When the fixed price is in the money of the country, that place of exchange is said to *receive* the variable price: when the uncertain price is in that money, it is said to *give* the variable price.

Thus London *receives* from Paris — *Francs* — *Cents* for £1 Sterling, and

London *gives* Lisbon — *Pence* for 1 Milreis.

It is to be observed, that in the quotations of Rates of Exchange the fixed terms are oftentimes not mentioned, and that only the variable terms are called Rates of Exchange.

A Par of Exchange is deducing the rate of exchange from the mintage or other valuations of the Coins of two countries, but these can hardly be said to afford any correct data for forming pars of exchange, further than for the purpose of general

information, because several of these Coins are not worked fully up to their standards, and because Gold being the standard of value in this country, and not being generally so elsewhere, but bearing a variable agio or premium, this agio would be required to be taken into consideration, and then the valuation of the Gold Coin, would become, at least as far as regards one of the places, properly only a valuation of bullion.

Silver is the general money of payment abroad : here it is so but to a very limited amount ; and in consequence of the high relative value which our mintage regulations have given to it, as against Gold, no mintage pars of exchange can, with any near approach to truth, be formed from a comparison between the British and any foreign Silver Coins. For example, from the mintage rates of the French and English Silver Coins, the par would be 23 Francs 24 Centimes, while from Gold, without the agio, the par is 25 Francs 22 Centimes per Pound Sterling.

This disagreement arises from the different relative values of the two metals in the two countries. In France, and it is else-where nearly the same, 1 portion of fine Gold is rated equal to 15½ like portions of fine Silver, or the mintage relative values of Silver to Gold, are as 1 to 15½, while in England they are as 1 to 14 287—an arrangement by which we are certain to keep our Silver Coin in the country, since it has no value approximate to its English current value in any other country ; and, therefore, Gold Coin, which is employed to restore the equilibrium of exchanges, necessarily occasions, by the conflict of these an-tagonist principles, a great liability to serious disturbance in our monetary system.

N.B. In the following Estimations of the Gold Coins of other countries they are valued at the mintage rate of £3. 17s. 10½d. per Oz. British Standard ; but the Silver Coins are rated at the assumed price of 60 Pence per Oz. British Standard.

The Moneys of all countries are divided into two heads, Metallic and Paper Currency.

Metallic Currency consists of stamped pieces of metal of certain weights, and, when made of Gold or Silver of a certain degree of purity, generally called the Standard, which is regu lated by the laws of the Government of the country in which

they are issued. In most States of Europe the fabrication of Coins is kept in the hands, and regulated at the sole will, of the Monarch or Executive Government. In France, and Holland as far as regards Ducats, private individuals are permitted to have the precious metals minted or exchanged for Coins, upon payment of a seignorage. In this country alone Gold is wrought into Coin* free of all charge to the party bringing it into the Mint.

Paper Currency consists of Notes issued either by the Government, or by public Banks with its sanction. These Notes contain a promise to pay a specific sum of money in Metallic Currency; but in many instances they have been issued in such large amounts, as to render it impossible for the Governments to pay them in full, and when they have been redeemed, it has been at a great reduction of value.

WEIGHTS AND MEASURES.

The Standards or Models are generally determined by the Government of the States in which they are used.

The relations that the Standards of a nation bear to each other are in most instances entirely arbitrary; and no rule seems to have formerly been observed by which the one might be deduced from the other. Attempts have been made in later times to introduce a more correct system;† but so many difficulties have to be encountered, that the best exertions of the most scientific persons have not yet been *able to overcome them.*

The Operations of Exchange are usually divided into Direct, Cross, and Indirect or Arbitrated.

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* For an account of the modes of assays, &c , see " Tate's Counting-house Guide."

† For an account of the metrical system, see " France."

DIRECT EXCHANGES.

DIRECT Exchanges are the operations of exchange between two Countries, from their own rates of Bills of Exchange, without the medium of any other place.

GREAT BRITAIN.

LONDON.

4 Farthings = 1 Penny.
12 Pence = 1 Shilling.
20 Shillings = 1 Pound.

ACCOUNTS are kept in Pounds, Shillings, and Pence; which money is called Sterling, to distinguish it from the Colonial Money, and from some Monies of the Continent which bear similar denominations.

The Gold Coins are the Sovereign and Half Sovereign.*

The rate of the value of the Pound Sterling in Gold, is for 1869 Sovereigns, or Pounds, to be coined out of 40 Troy Pounds' weight of Gold 11-12ths fine. The full weight therefore of a Sovereign is Dwts. 5 $3\frac{171}{623}$ Grains, and the fine weight is $113\frac{1}{623}$ Grains.

The Sovereign, when less in weight than 5 Dwts. 2¾ Grains, or the Half Sovereign, when its weight is less than 2 Dwts. 13½ Grains, has no legal currency.

The Silver Coins are Crowns of Five Shillings each, Half Crowns, Florins of Two Shillings each, Shillings, Sixpences, and Four-pences, or Groats.*

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* There are also Gold Coins of two and five pounds each, but these are seldom used as money. Groat is derived from the Saxon word *Grot*, signifying great, because formerly it was the greatest of the Silver Coins. There are also pieces of three pence, two pence, and one penny in Silver, as these are minted for the particular purpose of forming gifts of royal

The rate of Coinage for Silver is 66 Shillings from 1 lb. Troy of Silver 37-40ths fine. The full weight of a Shilling is therefore Dwts. 3 $15\frac{3}{11}$ Grains, and the fine weight $80\frac{8}{11}$ Grains.

The Copper Coins are pieces each of one Penny, a Halfpenny, and a Farthing, coined at the rate of 24 Pence per lb. Avoirdupois, and for some of the Colonies Half Farthings, or eighths of a Penny, have been issued.

The Promissory Notes of the Bank of England, which are payable on demand, are a legal tender for sums of money amounting to more than £5.

The Silver Coins are not a legal tender for any amount of more than 40s., or the Copper Coins for more than 12d. in Pennies and Halfpence, or 6d. in Farthings.

The coinage of Gold is conducted for the public, free of all expense whatever to the parties importing or bringing Gold into the Mint,* it being open to any person to have any quantity of

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beneficence on Maunday Thursday, and hence are called Maunday money. Farthing is another word for fourthing.

Sterling is a contraction of the word Easterling, and abroad is considered to be equivalent to English money. The character £ is used to denote a pound of this money. £. s. and d. are contractions of the Latin words libræ, solidi, and denarii

* It may be noticed, as a peculiarity in the moneys of this country, that in the principles for issuing them there is a material distinction between our gold and our silver and copper coins.

A great mistake has frequently been committed, especially of late, in supposing, because Gold is coined under the superintendence of Public Officers, and the Crown, with the sanction of Parliament when any alteration is made, prescribes the standards and current values, that the Gold Coins are therefore issued by the Government But this is altogether contrary to the fact. The Government coins no Gold for itself; it, like any individual, procures its supplies, when wanted, from the Bank of England, who alone, for many years, have been the sole importers of Gold into the Mint. It is consequently absurd to suppose, that any claim can properly be made upon the Government (or indeed upon the Bank), to reimburse whatever loss arises from the wear or ill-usage of this coin, more than there would be upon any gratuitous fabricator of any other material, to have the things wrought from it repaired or renovated, after they had undergone long and possibly very unfair treatment.

The Nation chooses to have Gold for its standard of value. The Bank purchase Gold with their Notes. The Government works it into Coin free of expense, and the Bank issues it to the Public in re-exchange for those Notes, at a trifling advance of rate, by reason of the gratuitous workmanship, but which advance is barely sufficient to defray the expenses they incur. The loss which individuals suffer, occasionally, from lightness of weight, must be considered as a trivial premium paid for the use of this money (which could be avoided by using Silver), and any such alteration

Gold, of not less than £10,000 in value, wrought into Coin, and re-delivered to him, for standard weight of metal the same weight of coin, without the least charge.

The privilege of having Silver and Copper wrought into Coin is vested solely in the Crown. The Coins of these metals, therefore, being issued by the Government, and not being the standards of value, are, when much worn, at occasional periods either called in, and new Coins given for them, or, as at present, the same principle is virtually acted upon, by giving permission to the Bank to select the deteriorated pieces, and obtain those of full weight in exchange.

WEIGHTS AND MEASURES.

The Gold and Silver weight is the Troy pound of 12 ounces. The ounce is 20 dwts., each of 24 grains.*

For Diamonds, the ounce Troy is divided into 151½ carats, making 6 carats, equal to 19 grains nearly. For Pearls, it is divided into 600 grains, or 5 pearl grains equal to 4 grains Troy.

in the system as would oblige the Government, or the Bank, to receive light Gold at its full nominal value, by giving in exchange full weight coin would, if it did not quickly stop the supplies, be only giving encouragement to its fraudulent deterioration.

The recent permission given to the Bank to receive light Gold *by weight* was no contravention of the above principle. The payment for it was carried to the debit of the Government in account; the Government has been at some extra expense for the recoinage, the money returns into circulation through the Bank or other medium, and it either directly or ultimately passes to the credit of the same public account

* The basis of the Troy weight was the ancient Saxon mark of 10 ounces or 3600 grains, or more correctly, the Saxon pound of 15 ounces or 5400 grains, which pound, called also the moneyer's pound, was employed in the mintage of our coins until the reign of Henry VIII., by whose orders the troy pound of 16 Saxon ounces or 5760 grains was substituted for it. Troy weight was formerly in general use for the finer sorts of merchandise. According to the statements in the Report of the Commissioners for Weights and Measures, the word *troy*, as used for this weight, is derived from *Troja nova*, the name given to London by the monkish writers in their fabulous account of its having been founded by some Trojan exiles. Hence the term Troy weight is equivalent to London weight. *Avoirdupois*, on the authority of the same report, is a corruption and compound of the low Latin word *averia*, signifying coarse or refuse goods, and the French word *poids*, weight.

The English Medicinal weight has for its integer the pound Troy, divided into 12 ounces, 96 drams, 288 scruples, or 5760 grains or minims.

The Commercial weight is the pound Avoirdupois, weighing 7000 Troy grains. 112 pounds make 1 cwt. ; and 20 cwt. 1 ton. The pound is divided into 16 ounces, each of 16 drams.

The Liquid measure of the Imperial pint is reckoned to be by weight equal to 20 ounces Avoirdupois, or 8750 Troy grains. It is divided into 16 fluid ounces, each of $546\frac{7}{8}$ grains Troy, or $1\frac{1}{4}$ ounces Avoirdupois.

The Troy pound is in the proportion to the pound Avoirdupois as 14 to 17 nearly; but the Troy ounce is greater than the Avoirdupois in the proportion of 79 to 72 nearly.

$$144 \text{ lb. Avoirdupois} = 175 \text{ lb. Troy.}$$
$$192 \text{ oz.} \quad ,, \quad = 175 \text{ oz.} \quad ,,$$

MISCELLANEOUS WEIGHTS.—Foreign wool is always sold by the pound ; but in the sale of British wool to the manufacturers and wool-staplers by the growers, the clove of 7 lb., the stone of 14 lb., the tod of 2 stones, the wey of 13 stones, the sack of 26 stones, and the pack of 240 lb., are still sometimes used. A last of wool is 12 sacks; of flax or feathers, 17 cwt. ; of gunpowder, 24 barrels of 100 lb. each. A firkin of butter is 56 lb. ; of soft soap, 64 lb. A fodder of pig lead in London is $19\frac{1}{2}$ cwt. A faggot of steel or a seam of glass is 120 lb. A sack of flour, 280 lb. A truss of straw, 36 lb. ; of new hay, 60 lb. ; of old hay, 56 lb. ; and 36 trusses make 1 load.

The measure for Liquids is the Imperial Gallon. Its contents of distilled water of the temperature of 62 degrees of Fahrenheit's thermometer, or $13\frac{1}{4}$ degrees of Reaumur's thermometer, the barometer being at 30 inches, weigh 10 lb. Avoirdupois, or 70,000 Troy grains, and is computed to measure 277.274 cubic inches. The weight of 1 cubic inch of this water is stated to be 252.458 Troy grains, making 1 cubic foot to be 62.321 lb. Avoirdupois. The gallon is divided into 4 quarts, or 8 pints; the half-pint is frequently called a gill.

The measure for Seeds and Dry Goods is the Imperial Bushel of 8 Imperial gallons. Its contents are therefore 2218.192 cubic inches. 8 bushels make 1 quarter, and 10 quarters 1 last.

The Tun contains 252 gallons, but is seldom used except in the measure for Oil, and is nominally divided into 2 pipes,

3 puncheons, 4 hogsheads (hhds.), or 6 tierces, but which divi-
sions are seldom used.

For Beer, the Firkin contains 9 gallons, the Kilderkin, 18
gallons, the Barrel, 36 gallons, and the Butt, 108 gallons.

The Merchants' measures for Wine are as follows:—

		Gallons.			Gallons.
Port	pipe	115	Lisbon and Bucellas	pipe	117
Sherry . . .	,,	108	Hock . . .	hhd.	30
Madeira and Cape	,,	92	Claret and Hermitage	,,	46
Sicilian . . .	,,	93	Tent	,,	52
Teneriffe and Vidonia	,,	100	Spanish Red . . .	tun	210
Malaga . . .	,,	105			

The Imperial gallon of Oil is estimated to weigh 9 lb. Avoir-
dupois; the tun of Oil therefore weighs 20 cwt. 1 qr.

Besides Oil, the following articles are sold in this country by
weight, under the denomination of measure : —

> Flour, by the sack of 280 lb.
> American Flour, by the barrel of 196 lb.
> Oatmeal, by the Scotch boll of 140 lb.
> American Pitch, by the barrel of 31½ gallons, each of 9 lb
> making the barrel weigh 283½ lb.

The usual Commercial Measure of length is the Yard of 3 feet,
each of 12 inches. The Inch is usually divided into either halves,
quarters, and eighths, or into tenths, or twelfths. 1760 Yards
make 1 Mile, called a Statute Mile, as being fixed at this length
by Act of Parliament: it is also so called to distinguish it from
the Geographical Mile, or 60th part of a Degree of the Meridian,
which Degree in the Latitude of London, reduced to the level
of the sea, is computed at 69·146 Statute Miles.

The mile is also divided into 8 furlongs. 3 miles make
1 league; and in the measuring of depths the fathom of 6 feet is
sometimes used.

For Land, the rod, pole, or perch is also used, the legal mea-
sure of which is 5½ yards; 40 poles make 1 furlong. The chain,
consisting of 100 links, is 4 poles, 66 feet, or 792 inches.

For Cloth, the yard is divided into quarters, eighths, and six-
teenths; the quarter is divided into 4 nails, each of 2¼ inches.
An ell is 5 quarters of a yard.*

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* The basis of the lineal, as well as of the superficial and solid, measures
of this kingdom, is the " Imperial Standard Yard," which was defined to

MEASURES OF SURFACE.—144 square inches make 1 foot; 9 square feet 1 yard; 100 square feet 1 square of flooring, &c.; 272½ square feet 1 rod of brickwork of the thickness of a brick and a half. In the measurement of Land 30¼ square yards make 1 perch, pole, or rod; 40 rods 1 rood; 4 roods 1 acre; and 640 acres 1 square mile; also 16 square poles make 1 square chain; or 484 square yards, or 10 square chains, 1 acre. A hide of Land is 100 acres. The terms roods and acres are only used in Square measure, and it is therefore unnecessary to say a square rood, or a square acre.

MEASURES OF SOLIDITY.—1728 cubic inches make 1 foot; 27 feet 1 yard. The cubic yard is sometimes called a load (meaning a cart-load) of earth, &c. 50 cubic feet make a load of timber;* and 40 cubic feet are a regular ton of shipping, but this varies in different trades.

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be " the straight line or distance between the centres of two points in the gold studs in the straight brass rod now in the custody of the Clerk of the House of Commons " This standard, as is well known, was destroyed or rendered useless, with the other imperial standards, on the destruction of the Houses of Parliament, but for the purpose of affording the means of restoring the same length, by reference to some invariable natural standard, it was declared, that when compared with a pendulum vibrating seconds of mean time in the latitude of London in a vacuum at the level of the sea, it would be in the ratio of 36 inches to 39 inches and 1393-10000ths of an inch Since the passing of the Act, however, it has been discovered that several elements of reduction of the pendulum experiment were doubtful or erroneous, and that the course prescribed by the Act would not reproduce the length of the original yard —See the Report of the Commissioners for the Restoration of the Standards of Weights and Measures.

* In the measurement of deals, of battens whose width does not exceed 7 inches, and of deal ends whose length does not exceed 8 feet, the value is determined by the following standards:—

Deals, &c., from Onega, Archangel, St. Petersburg, Narva, Wyburg, Memel, and Danzig, and also Quebec yellow pine deals, are sold by the St. Petersburg standard hundred, containing 120 pieces, 12 feet long, 1½ inch thick, and 11 inches broad

Deals from Stockholm and Géfle are sold by the Swedish standard hundred, containing 120 pieces, 14 feet long, 3 inches thick, and 9 inches broad.

Deals from Christiania, Frederickshall, Dramen, and Gotheborg, and also white spruce deals from Canada, are sold by the Norwegian standard hundred, containing 120 pieces, 12 feet long, 3 inches thick, and 9 inches broad.

Battens are commonly sold by the standard hundred, containing 120

The chief of the late Measures of Capacity were, the Wine Gallon of 231 Cubic Inches, the Beer Gallon of 282 Cubic Inches, and the Winchester Bushel of 2150·42 Cubic Inches.

Hence 5 Imperial Gallons are nearly 6 Wine Gallons, and 31 Imperial Bushels nearly 32 Winchester Bushels; but, with more precision,

100 Imperial Bushels   = 103·15 Winchester Bushels.
100 Winchester Bushels =   96·94 Imperial Bushels.

The Wine Gallon and the Winchester Bushel are still in use in the United States and in some of our own Colonies, the former being also used in the sale of spirits by English importers in several foreign places.

The Standards of the Weights and of the Measures of length are the same as formerly; but the working Standards or Models of the Weights having become diminished by use, they were altered to the correct weights when the Imperial Standards of Capacity were adopted.

pieces, 12 feet long, 2½ inches thick, and 7 inches broad. But they are sometimes sold by the same standard as deals.

Danzig and Memel deck deals are sold by the standard piece of 40 feet long, 3 inches thick, and 12 inches wide

Oak plank from Danzig, Stettin, or Memel, of 3 or 4 inches thick, and 20 to 40 feet long, is sold by the load of 50 cubic feet.

Lathwood and firewood are sold by the cubic fathom

No lower measures are used than 1 foot in length, 1 inch in width, and half an inch in thickness.

Duties on timber, deals, and all hewn and sawn wood, are taken by the cubic measurement of 50 feet to the load, and rated at per load.

TABLES

OF THE

RELATION OF THE IMPERIAL WEIGHTS AND MEASURES

TO THE

CHIEF WEIGHTS AND MEASURES OF THE CONTINENT.

TROY WEIGHT.

100 Ounces Troy are equal to, in

France	.	3.11035	Kilogrammes of 1000 Grammes.
Netherlands	.	3.11035	Ponden or Kilo. of do.
Hamburg	.	13.3037	Cologne Marks of 16 Loths.
Prussia	.	13.301	Prussian Marks of 16 Loths.
Sweden	.	14.769	Marks of 16 Lods.
Russia	.	7.597	Pounds of 32 Loths or 96 Solotnicks.
Turkey	.	9.696	Chequees of 100 Drams.
Austria	.	11.077	Vienna Marks of 16 Loths.
Naples	.	116.363	Neapolitan Ounces.
Spain	.	13.518	Castilian Marks of 8 Ounces.
Portugal	.	13.553	Marks of 8 Ounces.

AVOIRDUPOIS WEIGHT.

100 lb Avoirdupois are equal to, in

France	.	45.36	Kilogrammes.
Netherlands	.	90.72	Half Ponden or Kilogrammes.
Hamburg	.	93.62	Pounds of 16 Ounces of 32 Loths.
Denmark	.	90.80	Pounds of 32 Lods.
Prussia	.	96.98	Pounds of 16 Ounces.
Sweden	.	106.71	Pounds, Victualie Weight.
Russia	.	110.78	Pounds of 32 Loths.
Turkey, Constant		35.35	Okes of 400 Drams.
Austria	.	80.96	Pounds of 16 Ounces.
Naples	.	141.41	Pounds of 12 Ounces.
Leghorn	.	133 58	Pounds of 12 Ounces.
Genoa	.	143.10	Pounds of 12 Ounces.
Spain	.	98.57	Pounds of 16 Ounces.
Portugal	.	98.82	Pounds of 16 Ounces.

TABLES CONTINUED.

112 lb Avoirdupois are equal to, in

France . . ,	50.80	Kilogrammes.
Netherlands .	101.60	Half Ponden.
Hamburg .	104.85	Pounds.
Denmark .	101.69	Pounds.
Prussia . .	108.62	Pounds.
Sweden .	119.50	Pounds.
Russia . . ,	3.102	Poods of 40 lb.
Turkey, Constant.	39.59	Okes.
Austria . .	90.67	Pounds.
Naples . . ,	0.5702	Cantaro of 100 Rottoli.
Leghorn .	1.496	Quintal of 100 Pounds.
Genoa . . ,	1.0685	Cantaro of 100 Rottoli.
Spain . . ‹	4.416	Arrobas of 25 lb.
Portugal . .	3.459	Arrobas of 32 lb.

100 Imperial Gallons are equal to, in

France . . .	454.34	Litres.
Netherlands . .	454.34	Kans.
Hamburg . .	62.75	Viertels, 20 to 1 Ahm.
Denmark . .	58.79	Viertels, 30 to 1 Oxhoft.
Prussia . . .	396.79	Quarts, 64 to 1 Eimer.
Sweden . . .	173.66	Kannen, 30 to 1 Eimer.
Russia . , .	36.97	Wedros, 18 to 1 Oxhoft.
Turkey . . - .	86.54	Almudes.
Austria . . .	8.03	Eimers.
Naples . . .	10.97	Barile of 60 Caraffi.
Leghorn . .	9.96	Barile of 20 Fiasche.
Do. . . .	13.58	Barile of Oil.
Genoa . . .	6.12	Barile.
Spain . . .	28.10	Cantaros of 8 Azumbras.
Portugal . .	27.47	Almudes of Lisbon.
Do. . . .	17.83	Ditto of Oporto.

TABLES CONTINUED.

10 Lasts or 100 Imperial Quarters are equal to, in

France . .	290.78	Hectolitres.
Netherlands .	9.69	Lasts of 30 Mudde or Hectolitres.
Hamburg .	9 18	Lasts of 30 Scheffels.
Denmark .	17.42	Lasts of 12 Toendes.
Sweden . .	176.41	Tunna of 36 Kappar.
Prussia . .	7.34	Lasts of 72 Scheffels.
Russia . .	138.64	Chetwerts.
Turkey . .	828.41	Killows of Constantinople.
Austria . .	472.86	Metzen.
Naples . .	568.58	Tomoli.
Leghorn . .	397.89	Sacks.
Genoa . .	241.51	Mine.
Spain .	514.78	Fanegas.
Portugal . .	2151.5	Alqueires of Lisbon.
Do. . .	1704.7	Ditto of Oporto.

100 Yards English are equal to, in

France .	91.44	Metres.
Netherlands	91.44	Ells or Metres.
Hamburg	159.58	Ells.
Denmark	145.67	Ells.
Sweden .	154.00	Ells.
Prussia .	137.10	Ells.
Russia .	128.57	Arshines.
Turkey .	135.21	Pikes.
Austria .	117.35	Ells.
Naples .	43.27	Canne of 8 Palmi.
Leghorn .	153.87	Braccia.
Genoa .	36.575	Canne of 10 Palmi.
Spain .	107.83	Varas.
Portugal .	83.45	Varas.

A Bill of Exchange is defined to be a written order for the payment of money, and it necessarily must contain the sum of money to be paid; the names of the Drawer, or the party giving the order, and of the Drawee, or the party on whom the order is given;* and the party in whose favour it is drawn, called the Payee; the tenor or the conditions of the time at which it is to be paid; and, to render it legal or regular, the place whence, and the day on which, it is drawn, must also be described. When the Bill has received the Drawee's acceptance, or acknowledgment of agreeing to pay it, he is called the Acceptor. The party in whose possession the Bill is at any time, is called the Holder.

A Foreign Bill is properly one which is payable in a foreign country, in reference, in the first instance, to the Drawer of the Bill, and subsequently to any Holder of the Bill Thus a Bill upon Paris, wherever drawn from, is considered in London as a Foreign Bill in all exchange transactions. But a Bill drawn from Paris upon London, though frequently here termed also a Foreign Bill, is correctly called a Bill Receivable by the Holder, and a Bill Payable by the Payer of the same.

The amount of a Foreign Bill is usually expressed in the money of the country in which it is to be paid; but sometimes it is drawn in the money of the country of the Drawer of the Bill: thus, in this kingdom, mercantile Bills for shipments, or for settlements of accounts, and especially those remitted from the country for negotiation or sale in London, are frequently drawn in Sterling money; and then the amount which is to be paid abroad, is fixed by the rate of exchange at which it is first negotiated being stated on the Bill, usually in the endorsement.

A Bill of Exchange is transferred from one party to another by endorsement or signature of the Transferrer on the back of the Bill. This Endorsement is of two kinds, Special and General. It is called Special when it is made payable to the order of the Transferree, which order, or his endorsement, must therefore be

* Bills are frequently made payable to Order, that is, to the order of the Drawer, which order he must therefore give, by either general or special endorsement, when he parts with the Bill.

given by him when he parts with the Bill. A common form of such endorsement is this:—

<p style="text-align:center;">*Pay to the order of Messrs. Reed and Carter,*</p>

<p style="text-align:right;">*William Jones.*</p>

The endorsement is called General when only the signature of the Transferrer is given, as

<p style="text-align:center;">*Reed and Carter,*</p>

for the next endorsement to the above;* but the former is the safer practice, especially when transmitted by post: and in foreign endorsements the place and date are likewise often stated, as well as when negotiated, and whether the value has actually been received, or has only been received in account, which also is commonly placed upon the Bill by the Drawer, together with a direction as to what account it is to be carried, and whether advice of its being drawn is given, or whether it is to be accepted "with or without Advice."

Bills of Exchange are generally drawn in sets of two or more Bills, either of which being paid, discharges the debt upon the other two. They must be drawn on a Stamp, if the law of the place so requires it, in order to make them legal documents. The first of a set (when they are intended to be put in circulation, or sold by one party to another) is commonly sent unendorsed to a correspondent in the place drawn upon, in order to get it accepted, and to be kept until it is demanded by the holder of one of the other Bills, the address of the party in whose hands is the

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* Each endorser is liable for the payment of the Bill in case the drawee or acceptor does not pay it; but any irregularity, such as the Bill not being presented for payment on the day it is due, and neglect in giving due advice of non-payment, or the omission of an endorsement where the one preceding has been made special, absolves the drawer and the whole of the endorsers in the first case, and the same previous to the irregularity in the other cases. Irregularity of endorsement is also a reason for non-payment until made regular, of even an accepted Bill. On these and other legal points various writers of eminence have employed their talents in classifying and expounding the numerous decisions upon these matters in our Courts of Law, to which the reader is referred. Among the most convenient for reference will possibly be found, " A Practical Treatise of the Law of Bills of Exchange, Promissory Notes, Bank Notes," &c., &c., by Mr. Sergeant Byles.

accepted or first Bill, being put on the Bill or Bills in circula-
tion, as in this form :—

First with Messrs. Jones and Smith, to whom in case of need.

The endorsed Second and the accepted First, when wafered or
fastened together, become one Bill, or have the same validity.

This addition of " Case of need" signifies that should the
Draft not be honoured either in acceptance or payment, or both,
the party thus named is to be applied to, for his interference for
the honour of his correspondent, and for preventing his incurring
those expenses which attend the return of the Bill through the
intervening Endorsers.

The times for which Bills are drawn vary, in some measure,
according to the usages of different places ; but more generally
they are according to the purposes for which they are drawn.
Bills at sight, or to be peremptorily paid on their being pre-
sented, are for reimbursements on account, commonly, of returned
or dishonoured Bills. Those at short sight, as 3 days' sight, are
usually for returns for operations in Bills, Bullion, and Foreign
Stock. Bills at 1 month have no particular character ;—those
at 2 months are commonly Mercantile Bills ;—and those at
3 months, for Banking Operations, which latter Bills are drawn
at this long period, in order to afford full time for waiting to take
advantage of any rise in the rates of exchange, or for their being
sent about from place to place, wherever there is a probable
opportunity of making a profit. The rates of exchange at which
Bills on various foreign places have been negociated, are pub-
lished in an Exchange List, or Course of Exchange in the follow-
ing Form :—

NOTE.—Bills of Exchange, drawn upon or payable in this country, other-
wise than at sight, have, it is well known, three days of Grace, or are not
due until the end of that time beyond the period for which they are drawn.
This is not, however, the practice in any other country of Europe except
Austria, and there, with some exceptions, the· same Grace is allowed , but
when the third day falls upon a Sunday or public holiday, instead of being
due, as in this country, on the previous day, they are due on the following
day of business. In other countries the days of Grace, where allowed,
merely form an interval within which certain legal proceedings cannot be
instituted.

COURSE OF EXCHANGE.

London receives from or gives to

Amsterdam	12	3	Florins and Stivers	for 1	£ Sterling.
Hamburg	13	12	Mks and Schill.	— 1	£ Sterling.
Paris	25	50	Francs and Cents	— 1	£ Sterling.
Frankfort		121	Z. V. Florins	— 10	£ Sterling.
Vienna	13	70	Florins and Kreuz.	— 1	£ Sterling.
Genoa	25	35	Lire and Centisimi	— 1	£ Sterling.
Berlin	6	25	Dollars and Silver Gros.	1	£ Sterling.
Milan	25	40	Lire and Cent.	— 1	£ Sterling.
Leghorn	25	50	Lire and Cent.	— 1	£ Sterling.
Lisbon		53¼	Pence Sterling for	1	Milreis.
Madrid		50¼	Pence —	1	Hard Dollar.
Gibraltar		48½	Pence —	1	Hard Dollar.
·Naples		39⅝	Pence —	1	Ducat.
Palermo		119½	Pence —	1	Onza.
Venice		47	Pence —	6	Lire Austriache.
St. Petersburg		38¼	Pence —	1	Silver Ruble.
Rio Janeiro		30	Pence	1	Milreis.
New York			Pence	1	U. S. Dollar.
Calcutta		23	Pence —	1	Comp. Rupee.

The rates of Rotterdam and Antwerp are similar to the Amsterdam rate. That of Altona is similar to Hamburg, but by custom it is usually quoted ½ Sch. Bco more, or, as it is called, worse. The Trieste rate is similar to the Vienna rate, and the Cadiz, Bilboa, Barcelona, and Seville rates are similar to that of Madrid.

The Usance of Bills drawn from France, Holland, and Germany is 30 days' date; from Spain and Portugal 60 days' date; and from Italy 3 months' date.*

The days of grace are 3. Bills are not presented for payment until the 3rd day, except this is a Sunday, Christmas-Day, or Good-Friday, when the Bill is reckoned due on the day before.

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* The term Usance means the customary or usual time for which Bills are drawn from the given place, upon the place of payment. Double usance signifies double that time.

In Bills drawn from London it is most usual to specify the time, and in general, abroad, the practice of drawing Bills at usance is wearing away.

The days for the negociations of Foreign Bills of Exchange are Tuesdays and Fridays. These are called Foreign Post Days, being the principal Post Days in consequence of the exchange business. It is the custom in London with Houses of established credit, to pay for the Foreign Bills they buy on one post day, on the following post day, when they receive the second and third Bills of Exchange.

The Stamp Duties are paid by the Seller or Drawer.

The Brokerage on Bills is 1 per 1000; or 1-10th per Cent.

The present Stamp Duties are as follow:—

INLAND BILL OF EXCHANGE, Draft or Order for the ayment to the Bearer, or to Order, at any Time otherwise than on demand, of any Sum of Money

		Duty.
	£.	£. s. d.
Not exceeding	5	0 0 1
Exceeding £5 and not exceeding . . .	10	0 0 2
,, 10 ,, . . .	25	0 0 3
,, 25 ,, . . .	50	0 0 6
,, 50 ,, . . .	75	0 0 ·9
,, 75 ,, . . .	100	0 1 0
,, 100 ,, . . .	200	0 2 0
,, 200 ,, . . .	300	0 3 0
,, 300 ,, . . .	400	0 4 0
,, 400 ,, . . .	500	0 5 0
,, 500 ,, . . .	750	0 7 6
,, 750 ,, . . .	1000	0 10 0
,, 1000 ,, . . .	1500	0 15 0
,, 1500 ,, . . .	2000	1 0 0
,, 2000 ,, . . .	3000	1 10 0
,, 3000 ,, . . .	4000	2 0 0
,, 4000 and upwards	.	2 5 0

FOREIGN BILL OF EXCHANGE drawn in, but payable out of, the United Kingdom,

If drawn singly or otherwise than in a Set of Three or more, the same Duty as on an Inland Bill of the same Amount and Tenor.

If drawn in Sets of Three or more, for every Bill of each Set,

| | Duty. | | |
	£.	£.	s.	d.
Where the Sum payable thereby shall not exceed	25	0	0	1
And where it shall exceed £25 and not exceed	50	0	0	2
50 ,,	75	0	0	3
75 ,,	100	0	0	4
100 · ,,	200	0	0	8
200 ,,	300	0	1	0
300 ,,	400	0	1	4
400 ,,	500	0	1	8
500 ,,	750	0	2	6
750 ,,	1000	0	3	4
1000 ,,	1500	0	5	0
1500 ,,	2000	0	6	8
2000 ,,	3000	0	10	0
3000 ,,	4000	0	13	4
4000 and upwards		0	15	0

FOREIGN BILL OF EXCHANGE drawn out of the United Kingdom, and payable within the United Kingdom, the same Duty as on an Inland Bill of the same Amount and Tenor.

FOREIGN BILL OF EXCHANGE drawn out of the United Kingdom, and payable out of the United Kingdom, but indorsed or negotiated within the United Kingdom, the same Duty as on a Foreign Bill drawn within the United Kingdom, and payable out of the United Kingdom. The Duties to be denoted by adhesive stamps. The holder to affix the same thereon before negotiating it, or presenting the same for payment; and the person negotiating such Bill to cancel the stamp.

PROMISSORY NOTE for the payment in any other manner than to the Bearer on Demand of any Sum of Money,

| | Duty. | | |
	£.	£.	s.	d.
Not exceeding	5	0	0	1
Exceeding £5 and not exceeding . . .	10	0	0	2
,, 10 ,, . .	25	0	0	3
,, 25 ,, . . .	50	0	0	6
,, 50 ,, . . .	75	0	0	9
,, 75 ,, . . .	100	0	1	0

PROMISSORY NOTE for the Payment, either to the Bearer on Demand or in any other manner than to the Bearer on Demand, of any Sum of Money   *Duty.*

					£.	£.	s.	d.
Exceeding £100 and not exceeding	.	.	200	0	2	0
,,	200	,,	.	.	300	0	3	0
,,	300	· ,,	.	.	400	0	4	0
,,	400	,,	.	.	500	0	5	0
,,	500	,,	.	.	750	0	7	6
,,	750	,,	.	.	1000	0	10	0
,,	1000	,,	.	.	5100	0	15	0
,,	1500	,,	.	.	2000	1	0	0
,,	2000	,,	.	.	3000	1	10	0
,,	3000	,,	.	.	4000	2	0	0
,,	4000 and upwards.	.	.	.	.	.	2	5	0

Note.—It may be observed, that the price of Bills depends upon the supply and demand, in the same manner as that of tea, cotton, or any other article of merchandise; and it must necessarily be the case that when Bills are abundant the price will be low, and when they are scarce the price will be high. The terms Better and Worse, as applied to rates of exchange, are convertible according to their application, and they must not be confounded with those of higher and lower prices. Thus, 25 francs 50 centimes per £ sterling give a better rate for drawing, and a worse rate of remitting, than 25 francs 70 centimes, the former being the dearer and therefore the better rate for selling than the latter, which is the cheaper and therefore the better rate for buying. When the price of Bills is above par, the exchange is said to be favourable, and when below par, to be unfavourable to the place that gives the *fixed* or certain price.

FRANCE.

MONEYS.

1 Franc = 100 Centimes.

THE franc established as the monetary integer in France by the law of the 6th May 1799, is also divided into 10 decimes, but this division is not much used.

The value of the franc in silver, which is the legal standard of value throughout France, is 9.384 pence sterling, the value of 1000 francs at 60*d.* per oz. standard being 782*s.* 0¾*d.* sterling, giving frs. 25 57.2 cts. for the equivalent value of £1 sterling. The value of the franc in gold is 9.516 pence sterling, giving frs. 25 22 cts. for the pound sterling, and making a difference of about 14 per mille in favour of the value of gold.

Previous to the adoption of the present monetary system, the money of account in France was in livres (tournois), sous, and deniers. The livre was divided into 20 sous each of 12 deniers, and the legal rate for the conversion of livres into francs was for 81 livres to be equal to 80 francs; but the ancient money of France has ceased to have currency since the 1st October 1834.

Coins. The gold coins of France are pieces of 20 francs, called Napoleons, Louis, Louis Philippe, &c., and pieces of 100, 50, 20, 10, and 5 francs each.

The silver coins are pieces of 5 francs, often called silver Napoleons, the double franc, one franc, and the half-franc.

The value of these coins in sterling according to their full mintage weights and purities are as follows:—

		s.	*d*	Weighing Gr.
Gold,	50 Francs . .	31	8·64	16.129
	20 Francs . .	15	10.32	6.4516
	Other pieces in proportion.			
Silver,	5 Francs . .	3	10.92	25.
	2 Francs . .	1	6.76	10.
	1 Franc . .	0	9.38	5.
	Other pieces in proportion.			

155 20-franc pieces, or 40 5-franc pieces, weigh 1 kilogramme.

It is to be observed of these valuations that they make the pound sterling equal to 25 francs 21.2 centimes in gold, and to 25 francs 57.2 centimes in silver, and in France its relative value to gold, in coins, being under the relative values of the two metals, gold coins generally bear a premium which, at the above valuations, is equal to about 14¼ per mille.

The new copper or bronze coins are pieces of 10, 5, 2, and 1 centimes, and weigh the same number of grammes.

WEIGHTS AND MEASURES.

The system of weights and measures now established throughout France, is known by the name of the Système Métrique, or metrical system, being based upon the length of the mètre: it has the following for its principal integers.

Mètre, a measure of length equal to the estimated ten millionth part of the terrestrial meridian or distance from the North Pole to the Equator.*

Are, a measure of surface for land equal to a square of ten mètres on each side.

Stère, a measure of solidity for firewood, equal to the cube of a mètre.

Litre, a measure of capacity for either liquid or dry measure, equal to the cube of the tenth part of a mètre.

Gramme, a weight of pure water at the temperature of melting ice, equal in quantity to the cube of the hundredth part of the mètre.

The multiples and parts of these integers are upon the decimal system, multiples being denoted by prefixes derived from the Greek, and parts by similar terms derived from the Latin; thus—

* This length was deduced from the measurement of an arc of the meridian comprised between Dunkirk and Barcelona, by which, after the requisite reductions, the length of the terrestrial quadrant was estimated to be equal to 5,150,740 toises anciennes de Paris, making the mètre equal to 3 pieds 11,296 lignes, or 443,296 lignes of the measures previously in use as the French standard of length.

deca signifies 10 times - deci the 10th part.
becto ,, 100 times - centi the 100th part.
kilo ,, 1000 times - mille the 1000th part.
myria ,, 10000 times

The words double and demi are permitted to be used to denote the double, or the half of the several integers.

REDUCTIONS OF FRENCH INTO ENGLISH WEIGHTS AND MEASURES.

Weights.—The weight of the Kilogramme, 1000 grammes, has been generally reckoned at 15434 grains troy, but this is slightly above the real weight of the French standard kilogramme, for from the most careful experiments made by Professor Miller, the weight of the English pound troy from a correct model, is equal to 373.2419 grammes, rendering the kilogramme equal to 15432.349 grains troy, or 2.2046 lb. avoirdupois. Hence—

100 Kilogrammes*	= 267.9227 lb. or 3215.0725 oz. troy.	
	= 220.4621 lb. or 1.9684117 cwt. avoir.	
100 oz. troy	= 3.11034976660 Kilogrammes.	
100 lb. troy	= 37.3241971992	,,
100 lb. avoirdupois	= 45.3592674296	,,
100 cwt. ,,	= 5080.237952	,,

* The weight of the kilogramme received in 1816 from the Paris Mint is stated to have been 15,433 grains, and the weights of other models of this standard were generally found to be in excess, so as to give an average of 15,434 grains; but this, by experience, has been found to be too high an estimation· to account for this variation it must be noticed, that by the laws of France exact conformity with the standards is not required, as it is in England, a *tolérance*, remedy, or deviation *en plus*, in excess from the exact standards, being allowed as follows:—

Iron Weights of   Tolérance

50 kilogrammes	20 grammes	= 308.654 grains troy.	
20 ,,	10 ,,	= 154.327 ,,
10 ,,	6 ,,	= 92.596 ,,
5 ,,	4 ,,	= 61.731 ,,
2 ,,	2 ,,	= 30.865 ,,
1 ,,	1 ,,	= 15.433 ,,

Copper or Brass Weights of

20 kilogrammes	1.50 ,,	= 23.149 ,,
10 ,,	.80 ,,	= 12.346 ,,
5 ,,	.50 ,,	= 7.716 ,,
2 ,,	.25 ,,	= 3.158 ,,
1 ,,	.15 ,,	= 2.315 ,,

[The

Medicinal Weights.—The Gramme being adopted as the basis of these weights, the ounce is reckoned equal to 8 gros or drachmes each of 80 grains, or of 4 grammes.   Hence—

1 ounce   = 640 grains = 32 grammes = 493.847 grains troy.

1 drachme = 80 grains = 4   ,,   =   61.731   ,,

1 grain   =   = 0.05 ,,   =   0.771   ,,

Measures of Capacity.—The contents of the Litre are equal to 61.028 cubic inches, or 1.7608 imperial pints.

100 Litres	=	22.01	Imperial gallons.
100 Imp. gallons	=	454.3389	Litres.
100 Hectolitres	=	275.125	Imperial bushels, or 34.39062 Imperial quarters.
100 Imp. bushels.	=	36.3474	Hectolitres.
100 Imp. quarters	=	290.7769	Hectolitres.

Measures of Length, Surface, and Solidity.—The exact length of the mètre in English Measure has been determined, by the Royal Society, to be equal to 39.370 English inches, or very nearly equal to 39 371 English inches, as estimated by M. Pictat, at which, with all requisite accuracy, it is commonly reckoned.

100 Mètres	= 328.0916	Feet, or 109.3638 Yards.
100 English inches	= 253.9954	Centimètres.
100 English feet	= 30.47922	Mètres.
100 English yards	= 91.43787	Mètres.

The Kilomètre (1000 mètres), which is generally used for itinerary distances, is equal to 1093.638 English yards, or 0.62138 English mile, making on the reverse 100 English miles equal to 160.9036 kilomètres.

The latitude for deviation thus given evidently renders it useless, for any purpose requiring much exactness of calculation, to have recourse to the models used in commerce, of the standard kilogramme, some of which may be found weighing 15,435 grains troy, being still within the legal limits. For purposes, therefore, in which much precision is required, as in the weighing of bullion, particularly gold, it is best to reckon the kilogramme at 15,432 grains, or 32 oz. 3 dwts. troy, as is done at the Bank of England; although, on the contrary, it is safest to allow 2 or 3 grains more to the kilogramme, except for weighings at the French Mint, in rendering English into French weights, in order to meet the difficulty of the tolérance.

100 kilogrammes are commonly styled 1 quintal métrique.   The demi-quintal métrique of 50 kilogrammes is therefore equal to 110.233 lb. avoirdupois.

For general estimations the kilometre may be reckoned at 5 English furlongs, making 8 kilometres equal to 5 English miles.

The **Myriamètre** of 10 kilomètres, equal to 6.2138 English miles, is also used; as is also occasionally the lieue or league. Of the latter there are the following descriptions :—

La lieue commune (the common league) of 25 to a degree, equal to 4.4454 kilomètres or 2.762 English miles.

La lieue de poste legale of 2 milles, or 2000 toises, equal to 3.8981 kilomètres or 2.422 English miles.

La lieue marine (nautical league) of 20 to a degree, equal to 5.567 kilomètres or 3.453 English miles.

In measures of surface, the square of the mètre and that of the decimètre are to those which are of most general use—

100 square mètres	= 1076.441	English sq. feet, or
	119.6046	English sq. yards.
100 square decimètres	= 1550.075	English sq. inches.
100 English square yards	= 83.6088	Square mètres.
100 English square feet	= 9.28987	Square mètres.
100 English square inches	= 0.6451	Square decimètres.

The Hectare, containing 100 ares, is the measure commonly employed for surface of land measure, is equal to 11960.46 English square yards, or 2 acres, 1 rood, 35 perches English statute measure, making—

100 Hectares . .	= 247.1169	Acres.
100 Acres . .	= 40.4666	Hectares.

In measures of solidity, cubic measure, the stère or cubic mètre, is equal to 35.31714 English cubic feet, or 1.308042 cubic yards.

100 Cubic decimètres	= 61028.024	Eng. cubic inches.
100 Cubic centimètres	= 61.028	Eng cubic inches.
100 Eng. cubic inches	= 16.38592	Cubic centimètres.

At the preceding estimation of the weight of the kilogramme, and at the following rates of exchange or valuations of the pound sterling, the corresponding prices per lb. and per cwt. English, are—

At 1 franc per kilogramme, or 100 francs per quintal métrique—

Exchange.		Per lb.	Per cwt.		
Frs.	Cents.	Pence.	s.	s.	d.
25	00	4.36	40.641	40	7½
25	10	4.34	40.479	40	5¾
25	20	4.32	40.318	40	3¾
25	30	4.30	40.159	40	2
25	40	4.29	40.001	40	0
25	50	4.27	39.844	39	10
25	60	4.25	39.688	39	8¼
25	70	4.24	39.534	39	6
25	80	4.22	39.381	39	4½
25	90	4.20	39.229	39	2¾
26	00	4.19	39.078	39	1

From this table the equivalents in sterling at any other rate per kilogramme or per quintal may be found by simple multiplication.

As at 35 centimes per kilogramme each at 25.50 d 4.27 × 0.35 = 1.49, or 1½d. per lb.

Or at 55 francs per quintal métrique, or 55 centimes per kilogramme s 39.844 × 0.55 = s 21. 11d. per cwt.

• TABLE of equivalent prices, in sterling, per Imperial gallon and per Imperial quarter, at the following rates of exchange and 1 franc :—

At 1 franc per litre.			1 franc per hectolitre.		
Exchange.		Per Gallon.	Per Quarter.		
Frs.	Cents.	Pence.	s.	s	d
25	00	43.62	2.3262	2	3.9
25	10	43.44	2.3169	2	3.8
25	20	43.27	2.3077	2	3.7
25	30	43.10	2.2986	2	3.6
25	40	42.93	2.2896	2	3.5
25	50	42.76	2.2806	2	3.4
25	60	42.59	2.2717	2	3.3
25	70	42.43	2.2628	2	3.1
25	80	42.26	2.2541	2	3.0
25	90	42.10	2.2454	2	2.9
26	00	41.93	2.2367	2	2.8

Thus, the price of brandy at 55 francs per hectolitre, or 55 centimes per litre, at the exchange of 25.50, is equal to 23½d. per Imperial gallon, for—

d 42.76 × 0.55 = d 23.518 = 23½d. per gallon.

So also the price of corn at frs. 16.56 per hectolitre, at the same exchange, is equal to s 37 9d. per imperial quarter, for—

s 2.2806 × 16.56 = s 37.7667 = 37s. 9d. per quarter.

Former French Weights and Measures.

The weights and measures of France were formerly in great diversity, all the principal towns throughout the kingdom having their own local standards, which, until recently, were pertinaciously continued, notwithstanding the various decrees against their use. So much difficulty was experienced in the introduction of the decimal system into common practice, that the Imperial Government was in a measure forced to give way to the demand for its modification, and to admit under the term of Système Usuel of the following divisions:—

The *livre usuelle* was formed of the demi-kilogramme or 500 grammes, and was divided into 16 ounces each of 8 gros or 576 grains.

The *boisseau usuel* was the 8th part of the hectolitre, and was divided into 4 quarts or 8 pints.

In measures of length the *loise usuelle* was equal to two mètres, and was divided into 6 pieds (feet) each of 12 pouces (inches). The *aune usuelle* was $1\frac{1}{5}$ mètre or 12 decimètres in length, and was divided into 4ths, 8ths, &c.

The ancient official weight in France was the *livre poids de marc ;* it was divided into 2 marcs, 16 ounces, 128 gros, 384 deniers or scrupules, each of 24 grains; it was equal to 489.5058 grammes or $7554\frac{1}{2}$ grains troy.

The *livre à soie de Paris* (for weighing silk) was 15 onces poids de marc, and was equal to 458.9 grammes or $7082\frac{1}{2}$ grains troy.

The *livre poids de table* of Lyon was equal to 428.3 grammes or 6610 grains troy.

The *livre poids de table* of Marseille was equal to 407.92 grammes or 6295 grains troy.

The chief of the former measures of capacity were, for corn, the *muid de Paris* and the *charge de Marseille.* The *muid de Paris* contained 12 setiers, 48 minots, or 144 boisseaux, and the setier was equal to 1.561 hectolitre or 4.29 imperial bushels. The *charge* contained 8 panaux, and was equal to 1.6 hectolitre (160 litres) or 4.402 imperial bushels. This measure still continues in use, as 16 decalitres, 16 hectolitres being equal to 10 of the former *charges* or 5.5025 imperial quarters.

Of liquid measures the *chopine de Paris* contained 23.475 Paris

cubic inches, and was equal to 4.657 decilitres or 0.82 pint English. The *millerole de Marseille* was one of the most known, both locally and as a standard of reference in southern countries. It was divided into 4 escandaux, and its contents were estimated at 64.384 litres, equal to 14.17 imperial gallons. As a measure equal to and under the denomination of 64 litres, equal to 14.08' imperial gallons, it is still used.

For wine and brandy the integers of measure or valuation mostly used in the places of production and export were the barrique and velte. The barrique of —

Bordeaux	= 30 veltes	= 226.20 litres	= 49.78 imp. gallons.
Bourgogne				
Champagne	= 27 —	= 205.46 —	= 45.22 —
Cognac				
Macon	= 28 —	= 213.07 —	= 46.89 —
Nantes	= 40 —	= 240.00 —	= 52.82 —

In measures of length the Paris foot called *pied of Roi*, of 12 inches or 144 lines, was equal to 324.84 millimètres, or 12.7891 English inches; hence,—

The aune de Paris was equal to 1188.45 millimètres, or 46.79 English inches.

The toise de Paris or toise du Peron was 6 pieds de Paris, or 6.395 English feet.

1000 Paris cubic inches equal 1210.575 English cubic inches, and were therefore equal to the contents of 4.3659 imperial gallons.

EXCHANGES.

The French laws and regulations respecting Bills of Exchange differ in no essential particulars from those of England, except that in a few respects they are more stringent.

There are no days of grace allowed either as part of the term of a bill or as claimable for the stayment of legal proceedings.

If a bill be not duly accepted or paid, protest of default must be made within twenty-four hours after presentation, and in case

of the failure of the acceptor of a bill protest may be made and an action may be brought against the drawer and indorsers without waiting for the expiration of the term which it has to run.

The holder of a bill, payable at or after sight, drawn from any foreign place upon France or the reverse, is obliged to present the same for payment or acceptance, within certain specified periods after the date of the bill, under penalty of losing all claim upon the indorsers, or even upon the drawer, if he can prove that the bill would have been honoured if it had been duly presented.

These periods, called *délais*, are regulated by the distance, and similar délais are appointed under like penalties for the suing of parties to dishonoured bills.

Usance is fixed to be 30 days, not including the day of the date, if after date, or of the presentation, if after sight.

COURSE OF EXCHANGE.

Paris gives to

London	Frs. 25.30 Cent.	for	1 £ Sterling.
Amsterdam	209¼	—	100 Florins.
Antwerp	99¼	—	100 Francs in Antwerp.
Berlin	376	—	100 Pr. Dollar.
Frankfort	212¼	—	100 Florins.
Genoa	99¼	—	100 Lire Nuove.
Hamburg	187	—	100 Marks Banco.
Leghorn	98⅞	—	100 Lire.
Lisbon	5.50	—	1 Milreis.
Madrid	5.28	—	1 Duro.
Milan	99	—	100 Lire.
Naples	423¼	—	100 Ducats.
Palermo	12·67¼	—	1 Onza.
Petersburg	370	—	100 Silver Rubles.
Vienna	187	—	100 Florins.

Example 1.

To exchange £ 500 into Francs at Fr. 25.42½ Cts.

	£		Francs		£
If	1	——	25.425	——	500 ?
			500		

Francs 12712.50 Cents.

42½ Centimes are here expressed as 425 Millièmes.

Example 2.

To exchange £ 454 10 6 into Francs at 25.25

Francs
454.525 amount at 1 Franc per £.
25.25

11363125
11363125
_____

Francs 11476.76 Cents.

When the shillings and pence in the Sum in Sterling are valued in decimal parts of a Pound, there must be as many figures rejected from the right of the Product, as there are decimal figures; and if, as in Ex. 1, the rate is rendered into Millièmes, an extra figure must also be struck off.

Instead of the above, we may multiply the rate by the number of the Pounds, and take parts for the shillings and pence; thus,

Francs   25.25   by 454

11463.50 for 454 £
12.62½   10 s
63   6 d

Francs 11476.76 Cents.

EXAMPLE 3.

To exchange Francs 11476.76 Cents into Sterling at 25.25

Fr.	£	Fr.
If 25.25 ——	1 ——	11476.76 ?

	£	£ s d
25.25)	1147676 (	454 10 6 Sterling.

```
25.25 ) 1147676 ( 454 10 6 Sterling.
         13767
         11426
          1326

       ) 26520 ( 10  s
         1270

       ) 15240 (  6  d
```

N. B. The lowest usual variation in the rate with **London** is 1¼ Cents; as 20, 21¼, 22½, 23¾ Cents, &c. In case the rate contains a fraction, the first and third terms may be multiplied by 2 or 4

EXERCISES.

Exchange

Ex. 1. £ 1000 into Francs at 25.17½
    2. £ 248 12 6 into Francs at 25.35
    3. £ 554 13 7 into Francs at 25.41¼
    4. Francs 10,000 into Sterling at 25.45
    5. Francs 4782.50 Cents into Sterling at 25.37½
    6. Francs 8897.57 Cents into Sterling at 25.51¼

PRODUCTS.

Ex. 1. Francs 25175.00	Ex. 2. Francs 6302.64
3. Francs 14095.78	4. Ster. £ 392 18 7
5. Ster. £ 188 9 5	6. Ster. £ 348 15 1

BELGIUM.

BRUSSELS AND ANTWERP.

100 Centimes   =   1 Franc or Florin.

THE official Money of account is in Francs and Centimes.

The old Brabant Money in Schillings and Grotes is sometimes employed in the rate of exchange with London.

The fixed relative value of the Franc to the Florin, is

47¼ Centimes of a Florin   =   1 Franc.

The relative value of the Schillings and Grotes to the Florin is given in the following page.

The value of the Belgian Money in Francs is the same as that of France, and the Pars of Exchange on London are consequently the same.

WEIGHTS AND MEASURES.

The Standards of these are the same as those of France or the Netherlands, but with some difference in the denominations; as Livres for Kilogrammes or Ponden; Litrons for Litres or Kannen; and Aunes for Mètres or Ells.

COURSE OF EXCHANGE.

Antwerp gives to

Amsterdam } Rotterdam }	212¼	Francs for	100 Florins N. Currency.
Paris	98¼	—	100 Francs.
London	25.12½	—	1 £ Sterling.
Hamburg	188½	—	100 Marks Banco.
Frankfort	213⅞	—	100 Gulden.

Amsterdam and Rotterdam are frequently quoted at a small Per-Centage premium or discount on the Par of 400 Francs for 189 Florins, and Paris on the Par of 100 Francs in Belgium for 100 Francs in Paris.

THE NETHERLANDS.

AMSTERDAM AND ROTTERDAM.

100 Cents. = 1 Florin, or Guilder.

THE Florin is also divided into 20 Stivers,* and in the late money of exchange it was reckoned at 40 Grotes Flemish, of which 12 Grotes made 1 Schilling Flemish, 10 Schillings Flemish being equal to 3 Florins.

A Rixdollar, a nominal money, is 50 Stivers or 2½ Florins.

The Gold Coins were pieces of 10 and 5 Guilders. The Silver Coins are Guilders, Half-Guilders, Quarter-Guilders, and pieces of 10 and 5 Cents.

The value of the Florin in Silver, 1 s 8 d; and the Par Flor. 11.97 Cents.

Ducats are allowed to be coined at the Mint at Utrecht for the convenience of merchants, but they form no portion of the legal Netherlands' currency. The full mintage value of the Netherland Ducat is 9 s 4½ d Sterling.

WEIGHTS AND MEASURES.

The Standards are the same as those of France, but with different denominations.

The Pond corresponds with the French Kilogramme, and is composed of 10 Oncen, 100 Looden, 1000 Wigtjes (Grammes), or 10,000 Korrels.

The Kop of Corn is the same as the Litre, and the Mudde or Zak with the Hectolitre, and contains 10 Schepel or 100 Kop.

The Corn Last of 30 Zakken contains 10.31 Imperial Quarters.

The Netherland Kan (Litre), for liquids, contains 10 Maatjees, or 100 Vingerhoeds. The Vat is 100 Kannen. Whale and Seal Oil is sold by the Kwardeel of 12 Steckan, old measure, rendering about 51½ Imperial Gallons.

---

* The Stiver is still used in the London rate of Exchange, but not in the Amsterdam rate.

The Gold Coins were suppressed by law in Holland in 1850

The Elle for Cloth Measure is equal to the Mètre, and is divided into 10 Palm, 100 Duim, or 1000 Streep.

For Land, in measures of length, the Roede of 10 Ellen, and the Mijle of 1000 Ellen (Kilomètre) are used. The Square and Cubic Measures, formed from the Elle, are the Vierkante, which is rather more than 10¾ Square Feet, and the Kubick-elle, equal to rather more than 35$\frac{8}{10}$ English Cubic Feet. The Bunder is used for the surface of Land, and is equal to the French Are.

In some of the Dutch colonies and settlements the former weights and measures of Amsterdam are still used.

The following are some of the former Amsterdam weights and measures still used in some of the Dutch colonies and settlements, with their equivalents in the present English standards :—

100 Amst. lb.	108.93 lb. Avoirdupois.
100 Mudden Corn	38.26 Imp. Quarters.
100 Stoops liquid	53.38 — Gallons.
100 Amst. Ells	75.92 — Yards.
The Leggar of 240 Stoops =	128.11 — Gallons.

COURSE OF EXCHANGE.

Amsterdam gives to

London	11.95	Florins and Cts. for	1	£ Sterling.
Frankfort	99¾	Florins	— 100	Z.V. Florins.
Genoa	47¼	—	— 100	Lire.
Hamburg	35	—	— 40	Marks Banco.
Leghorn	47¼	—	— 100	Lire.
Lisbon	46	—	— 40	Crusados of 400 Reis
Madrid	2.42	—	— 1	Duro.
Naples	79¾	—	— 40	Ducats del Regno.
Paris	55⅞	—	— 120	Francs.
Petersburg	1.92	—	— 1	Silver Ruble.
Vienna	36¼	—	— 30	Florins.

The Usance of Bills from England is 1 month's date. There are no days of grace.

Example 1.

To exchange £ 500 Sterling into **Florins, at Florins 12 2¼ Stivers.**

Flor. 12 2¼ St. = Flor. 12.11¼ Cents.

Florins.

12.1125
500

Flor. 6056.25 Cents.

Example 2.

To exchange £ 864 17 4 Sterling into Florins at Flor. 12 7½ Cents.

£ 864 17 4 = £ 864.8666

Florins.

$\frac{1}{20}$ - - 864.8666
12

10378.3992
- 43.243   for 5 Cents.
21.621   — 2½ —

Flor. 10443.26 Cents.

If, instead of this method, the rate should be multiplied by the number of Pounds Sterling, the 12 Fl. 7½ Cents must be expressed as Flor. 12.075 In the above, the multiplier may be this number, but in the regular performance of the multiplication, it requires a greater number of figures than the taking of the parts.

Example 3.

To exchange Flor. 6056.25 Cents into Sterling at Flor. 12 1¼ Cents.

Flor.		£		Flor.
If 12.11¼	——	1	——	6056.25 ?

| 48.45 | | | | 24225.00 |

£
4845) 2422500

£ 500 0 0 Sterling.

There being a quarter of a Cent in the rate, the extreme terms are multiplied by 4 to reduce it.

Example 4.

To exchange Flor. 10443.26 Cents into Sterling at Flor. 12 ½ Cents.

Flor.		£		Flor.
If 12.07½	——	1	——	10443.26 ?

| 48.30 | | | | 41773.04 |

£
483) 417730.4

£ 864.866 = £ 864 17 4 Sterling.

The extreme terms are here multiplied by 4, instead of 2, to get rid of the fraction, in order to make fewer figures in the divisor, and if the multiplier in Ex. 3, had been 8 instead of 4, it would have had the same effect.

Formerly the rate on London was quoted in Schillings and Grotes Flemish; some houses still use this form, with which the calculation is made as in the following Example.

EXAMPLE 5.

To exchange Flor. 6056.25 Cents into Sterling at 40 s 4½ g Flemish.

Reckoning 40 Sc. as 12 Florins, and 4½ Grotes as 2¼ Stivers or 11¼ Cents, the statement is made as in Ex. 4 : otherwise,

Sc. Gr.	£	Flor.
If 40 4½ —————	1 ———	6056.25 ?
12		40
484½		242250.00

$$£$$
$$4845) 2422500$$

$$£ \ 500 \ 0 \ 0 \text{ Sterling.}$$

The principle of this form of calculation is derived from 12 Grotes making 1 Schilling Flem. and 40 Grotes, 1 Florin.

EXERCISES.

Exchange

Ex. 1.   £ 1000 Sterling into Florins at Fl. 11.95 Cts.
2.   £ 1275 16 6 Sterling into Florins at Fl 12 1½ Stiv.
3.   Florins 8000 into Sterling at Fl. 12.05 Cents.
4.   Florins 475.35 Cents into Sterling at 11 Fl. 18¾ Stiv.
5.   £ 1000 Sterling into Florins at 39 s 10 g.
6.   Florins 5574.43 into Sterling at 40 s 1½ g.

PRODUCTS.

Ex. 1.   Flor. 11950.00   Ex. 2.   Flor. 15405.59 Cents
3.   £ 663 18 0 Ster.   4.   £ 39 16 5 Ster.
5.   Flor. 11950.00   6.   £ 463 1 9 –

HAMBURG.

<div style="text-align:center">

12 Pfennings   =   1 Schilling.
16 Schillings   =   1 Mark.

</div>

Marks or 48 Schillings are called, in exchanges, a Rixdollar.

There are two valuations of Hamburg, otherwise Lubec, money ; the one called Banco, and the other Currency.

Banco is a nominal valuation of the Cologne Mark weight of fine Silver, at $27\frac{3}{4}$ Marks Banco ;* from which estimation the Value of the Mark is $17\frac{1}{2}$ d Sterling, and the Par of Exchange, 13 Mks $10\frac{1}{2}$ Schill. per Pound Sterling. It is this money which is used in the accounts of wholesale business and in Exchanges, and it is of the same value as that called Flemish, 2 Grotes Flemish being equal to 1 Schilling Hamburg Banco ; 32 Grotes to 1 Mark Banco ; and 8 Schillings Flemish to 3 Marks Banco.

Currency is the value or rate of the coined money · this also is valued from the Cologne Mark weight of fine Silver which is to be coined into 34 Marks Current; hence the value of the 3 Current Mark Piece is 3 s 7 d, or of the Mark Current $14\frac{1}{4}$ d Sterling, making 1 £ Sterling equal to 16 Mks 12 Sch. Current.

The difference between the value of Banco and Currency is called Agio. It is continually fluctuating, because the Market Price of fine Silver is always varying ; at the above valuation the Agio is nearly $22\frac{1}{2}$ per Cent.

When Goods at Hamburg are sold in Currency, the Agio is generally fixed either at 20 or 25 per Cent. The Agio is reckoned upon the Banco; and in a like manner the allowance called Rabat of $8\frac{2}{3}$ per Cent, or $4\frac{2}{3}$ per Cent, is reckoned upon the net amount. It is therefore to be noticed, that at 25 per Cent the Agio is 1-5 th of the Current or 1-4 th of the Banco ; and at 20 per Cent it is 1-6 th of the Current or 1-5 th of the Banco ; also that the Rabat at $8\frac{2}{3}$ per Cent, is 13-163 rds of the given amount, and at $4\frac{2}{3}$ per Cent it is 7 out of 107 parts

---

* The Cologne Mark weight, of the Hamburg Standard, is 3608 Grains troy, or 7 Oz. 10 Dwts 8 Grs troy , and this weight of fine Silver at the rate of 60 d Sterling per Oz. Standard, is worth 40 s $7\frac{1}{2}$ d Sterling.

WEIGHTS AND MEASURES.

The Hamburg pound of 32 Loth (16 ounces), each of 4 quent, is estimated to be equal to 10080 Dutch As, 484.475 Grammes, or 7476.589 Grains troy.

A Schiffspfund is 20 Liespfund, each of 14 lb., or 280 lb. The Schiffspfund for land carriage is 20 Liespfund, each of 16 lb., or 320 lb., or 341.79 lb. Avoirdupois. A Hamburg Centner is 112, but a Centner is now more commonly reckoned to be only 100 lb., as is generally specified.

100 lb. Hamburg	=	106.81 lb. Avoirdupois.
112 —	=	119.625 —
100 lb. Avoirdupois	=	93.63 lb. Hamburg.
112 —	=	104.86 —

A Stein of Flax is 20 lb. or 21.36 lb Avoirdupois; of Feathers or Wool 10 lb., or 10.68 lb. Avoirdupois.

Liquid Measures.—The Viertel, or fourth part of an Eimer, is equal to 7 24028 Litres, or 1.593585 Imperial Gallon.

The Fuder contains 6 Ohm, 24 Anker, 30 Eimer, or 120 Viertel, each of 2 Stübchen, 4 Kannen, 8 Quartier, or 16 Oessel.

100 Viertel	=	159.3585 Imperial Gallons.
100 Imperial Gallons	=	62.7515 Viertel.

The Oxhoft of 30 Viertel is equal to 47.8075 Imperial Gallons.

Dry Measures.—The Last of Wheat of 3 Wispel, or 30 Scheffel, is equal to 10.886 Imperial Quarters; the Last of Oats of 2 Wispel, or 20 Scheffel, being equal to 1.05513 Hecto-litre, or 2.90293 Imperial Bushels.

100 Scheffel	=	36.2866 Imperial Quarters.
100 Imperial Quarters	=	275.584 Hamburg Scheffel.

The Scheffel contains 2 Fass, *the* Fass being a measure of 3876.947 Hamburg Cubic Inches, or 3217·09 English Cubic Inches, its diameter being 21⅛ Inches, and its depth 10⅞ Inches, Hamburg measure

Long Measures.—The Hamburg Foot of 12 Inches is equal to 0.286415 Metre, or 11.2764 English Inches. The Palm is 4 Inches. The Ell is 2 Feet or 24 Inches.

100 Ells	=	62.647	English Yards.
100 English Yards	=	159.624	Hamburg Ells.

The Brabant Ell of the Hamburg Standard is equal to 0.691412 Metre or 27.225 English Inches.

100 Brabant Ells	=	75.6155	English Yards.
100 English Yards	=	132.248	Brabant Ells.

In retail measurements 5 Brabant Ells are reckoned equal to 6 Hamburg. The Klafter is 6 Hamburg Feet.

The Hamburg Mile is 2000 Rheinland Ruthen, each of 12 Rheinland Feet of the same standard as Prussian Feet, and is equal to 7.5324864 Kilometres, 8237.82 English Yards, or 4.68058 English Miles, the same as the Prussian mile.

The Schock of Oak Planks is 60 Kravelen, the Kravel being 24 feet of plank, 2½ inches thick ; 15 feet, 3 inches thick ; 12 feet, 3½ inches thick ; 10 feet, 4 inches thick ; 9 feet, 4½ inches thick ; or 8¼ feet, 5 inches thick. The Ring of Staves consists of 4 Schocks each of 62 Pieces, 2 Rings of Pipe Staves reckoning as being equal to 3 Rings of Hogshead (Oxhoft) Staves, or to 6 Rings of Barrel (Tonnen) Staves. In general reckoning a Schock is 60 pieces; a Stiege, 20 pieces ; a Webe, 72 pieces ; a Zimmer, a score or 20 pieces, and a Decher, 10 pieces.

The Exchanges of Altona are the same as those of Hamburg.

All Bills of Exchange for 100 Marks Banco, or above, can legally be refused to be paid otherwise than by transfers of Banco.

It is to be observed that the Bank of Hamburg is not a bank of issue, it is merely a bank of deposit and transfer. No one who is not a burgher of Hamburg can have an account opened. Transfers are made by orders which must be delivered in person by the transferer or by his authorized representative.

COURSE OF EXCHANGE.

Hamburg, in Banco, *gives to* or receives from

London	13 8	Mks and Sch.	for	1	£ Sterling.
Amsterdam	35 40	Florins and Cts.	—	40	Marks Bco.
Augsburg	74	Florins	—	100	Do.
Berlin	152	Pruss. Dollars	—	300	Do.
Copenhagen	204	Rix-Bco. Dollars	—	300	Do.
Frankfort	88¼	Z. V. Gulden.	—	100	Do.
Genoa	187¼	Lire	—	100	Do.
Leghorn	187	Lire	—	100	Do.
Lisbon	48¾	Schill. Bco.	—	1	Milreis.
Leipzig	152	Dollars	—	300	Marks Bco.
Paris	188¼	Francs	—	100	Do.
Prague	97½	Florins	—	100	Do.
Spain	43½	Schill. Bco	—	1	Duro.
Petersburg	34	Do.	—	1	Ruble.
Vienna	102.25	Florins	—	100	Marks Bco.

The Usance for Bills from England, France, and Holland, is 1 month's date; from Italy, Spain, Portugal, Trieste, and Fiume, 2 months' date; from all parts of Germany 14 days after sight.

The days of grace are 12, if demanded.

EXAMPLE 1.

To exchange £ 550 10 0 into Banco at 13 6

$$\frac{1}{4} - - \quad 550 \quad 10$$
$$13 \quad 6$$

$$\overline{}$$

$$7150$$
$$\frac{1}{2} - - \quad 137 \quad 8 \quad \text{for 4 Schillings.}$$
$$68 \quad 12 \quad — \quad 2 \quad —$$
$$6 \quad 11 \quad — \quad 10 \text{ s Sterling.}$$

$$\overline{}$$

Marks Bco   7362 15 Sc

We here multiply 550 Mks by the 13, and take parts out of the 550 for 6 Sch. then for the 10 s, we take the half of 13 Mks 6 Sch.

Instead of this we may reduce the 13 Mks 6 Sch. into Schillings, (making 214 Schillings,) multiply these by the number of the Pounds, take parts for the Shillings Sterling, and then divide the total by 16, to bring it into Marks.

EXAMPLE 2.

To exchange Bco Mks 4896 12 Sc. into Sterling at 13 10¼

Mks Sc.	£	Mks Sc.
If 13 10¼	—— 1 ——	4896 12 ?
218 Sc.		78348 Sc.
873 Qrs.		313392 Qrs.

£
873) 313392

£   358 19 8 Sterling.

EXAMPLE 3.

To find the net produce of Mks 11363 9 Sc. at an **Agio** of
20 per Cent, and Rabat of 8⅔ per Cent.

```
                    Mks   Sc.
 ⅙  -  -  11363    9   Currency.
          1893   15   Agio.

   Mks      9469   10   Banco.
                   13

  163 ) 123105     2

              755    4   Rabat.

Bco Mks    8714    6   Net Proceeds.
```

This Rabat is 8⅔ per Cent calculated upon the Net Proceeds.

N. B. If the fluctuating Agio, which is generally about 23 per
Cent, is used, we must work the Proportion; thus, for the above,
at 23¼ per Cent we say,

```
       Mks           Mks           Mks   Sc.
If  123¼   ——    23¼   ——    11363    9   Curr. ?
                                    93
    ———           ——
    493           93
                  493 ) 1056811    5

                          2143   10   Agio.

                  Mks    9219   15   Banco.
```

EXERCISES.

Exchange

Ex. 1. £ 1000 Sterling into Banco at 14 0
    2. £ 534 15 0 into Banco at 13 11½
    3. £ 372 13 6 into Banco at 13 13¼
    4. Bco Mks 8765 4 into Sterling at 13 8
    5. Bco Mks 6000 0 into Sterling at 13 13¾
    6. Bco Mks 9257 11 into Sterling at 13 11¾

PRODUCTS.

Ex. 1. Mks 14000 0   Ex. 4. £ 649 5 6
    2. Mks 7336 2   5. £ 432 18 5
    3. Mks 5153 6   6. £ 674 1 1

BREMEN.

5 Schwaren	=	1 Grote.
72 Grotes	=	1 Rixdollar.

The Rixdollar is valued in Gold, from the old French and German Louisd'or, at the rate of 5 Rixdollars to 1 Louisd'or. Taking the value of this Louis d'or at 16 s 5 d Sterling, the value of the Bremen Rixdollar is 3 s 3.4 d, and the Par of Exchange on London is about 609½ Rixdollars of Bremen per 100 Sterling.

WEIGHTS AND MEASURES.

Weights.—The weight of the Bremen Pound was fixed by the ordinance of the Senate of the 18th July, 1818, at 498½ French Grammes, equal to 7693.85 Grains Troy. It was previously reckoned at 498¼ Grammes, or 7690 Grains Troy.

The Bremen Centner is 116 lb.; the Liespfund is 14 lb.; the Schiffpsfund is 2½ Centner or 290 lb.; the Pfundschwer is 22 Liespfund, or 308 lb.; the Wage of Iron is 120 lb.; the Stein, or Stone of Flax, is 20 lb.

100 Bremen lb.	=	109.912 lb. Avoirdupois.
100 lb. Avoirdupois	=	90.982 Bremen lb.
100 Bremen Centner	=	113.837 cwt. English.
100 cwt English	=	87.844 Bremen Centner.

Liquid Measures.—In Wine measure the Ahm contains 44 Stübchen, each of 4 Quarts, or 16 Mingeln. The Ahm of Rhein Wine is 45 Stübchen. The Oxhoft contains 6 Anker or 30 Viertel, each of 2½ Stübchen. In Beer measure the Tonne contains 45 Stübchen, the Half Tonne 24 Stübchen, and the Quarter Tonne 12½ Stübchen. The contents of the Stübchen are equal to 3.22143 Litres, or 5.67229 Imperial Pints.

100 Stübchen	=	70.9036 Imperial Gallons.
100 Imperial Gallons	=	141.036 Stübchen.

The Tonne of Train Oil of 6 Stckannen, each of 16 Mingeln

by weight, is equal to 216 Bremen lb. net, or 237.4 lb. Avoirdupois.

Dry Measures.—The Last of Corn contains 40 Scheffel, each of 4 Viertel or 16 Spind, and is equal to 29.6418 Hectolitres, or 10.19388 Imperial Quarters.

100 Bremen Scheffel =   25.4847 Imperial Quarters.
100 Imp. Quarters   = 392.391 Bremen Scheffel.

Long Measures.—The Bremen Ell of 2 Feet, or 24 Inches, was by the aforesaid ordinance fixed at 578$\frac{7}{10}$ Millimetres, equal to 22.784 English Inches.

100 Bremen Ells   =   63.2888 English Yards.
100 English Yards   = 158.006 Bremen Ells.

It is commonly reckoned that 6 Bremen Ells are equal to 5 Brabant Ells, and 8 Bremen Ells to 5 English Yards.

A Klafter is 3 Ells or 6 Feet ; a Ruthe is 8 Ells or 16 Feet.

A Last of Coal or Salt is 12 Tonnen, or by weight 4000 Bremen lb.

In the reckoning of Deals, &c., the great hundred consists of 2 Schock, 6 Stiege, or 120 pieces; of Skins, &c., 1 Decher or Zehnling consists of 10 pieces, 1 Zimmer of 4 Decher, or 40 pieces.

COURSE OF EXCHANGE.

Bremen gives, in full weight Louis, Carls, and Frederichsd'or, at 5 Rixdollars each, to

London	612	Rixdollars for 100	£ Sterling.
Amsterdam	127$\frac{1}{4}$	ditto — 250	Florins.
Hamburg	133$\frac{1}{2}$	ditto — 300	Marks Banco.
Paris	17$\frac{1}{4}$	Grotes — 1	Franc.

Bremen receives for 100 Rixdollars, from

Augsburg	107$\frac{1}{2}$	Rixdollars Currency.
Berlin	102	Prussian Dollars.
Frankfort	198$\frac{3}{4}$	Gulden in S. W. D.
Leipzig	109	Dollars.
New York	76$\frac{3}{4}$	U. S. Dollars.
Baltimore	79	U. S. Dollars.

The Usance of Bill from Germany is 14 days' sight from England, and France 1 month's date. The days of grace are 8.

LUBEC.

$$12 \text{ Pfenning} \quad = \quad 1 \text{ Schilling.}$$
$$16 \text{ Schilling} \quad = \quad 1 \text{ Mark.}$$

The value of this money of account is the same as that of Hamburg Currency, the Cologne Mark weight of fine Silver being valued at 34 Marks of Lubec.

WEIGHTS AND MEASURES.

Weights.—The Pound of 2 Marks, 16 Ounces, or 32 Loth, according to the Standard tried at the Royal Mint, is equal to 7479½ Grains Troy, or 484.612 Grammes, or 1.0685 lb. Avoirdupois.

The Liespfund is 14 lb. The Centner is 8 Liespfund, or 112 lb., equal to 119.67 lb. Avoirdupois

Liquid Measures.—The Viertel of 2 Stübchen, 4 Kannen, or 8 Quartier, is equal to 7.24028 Litres, or 1.59358 Imperial Gallon.

The Fuder is 4 Oxhoft, 6 Ohm, 24 Anker, or 120 Viertel, and is equal to 868.834 Litres, or 191.23 Imperial Gallons.

Dry Measures.—The Corn Scheffel of 2343.6 Lubec Cubic Inches, equal to 2039.73 English Cubic Inches, contains 0.3342295 Hectolitre, or 0.91955 Imperial Bushel, making

$$100 \text{ Scheffel} \quad = \quad 11.4943 \text{ Imperial Quarters.}$$

The Lubec Corn Last contains 96 Scheffel, and is therefore equal to 32.086 Hectolitres, or 11.0345 Imperial Quarters.

A Scheffel of greater contents was formerly used for Oats, but it has now for some time been abolished.

Long Measures.—The Lubec Foot of 12 Inches is reckoned equal to 0.291002 Metre, or 11.457 English Inches.

The Lubec Ell is 2 Lubec Feet, and 100 Lubec Ells are equal to 63.65 English Yards.

COURSE OF EXCHANGE.

Lubec gives to

Hamburg 123¼ Marks for 100 Marks Banco.

Almost entirely the whole of the Exchange business of Lubec upon other countries is transacted through the medium of Hamburg, and therefore Lubec Currency requires first to be reduced into Hamburg Banco, from which it may be exchanged into the money of any other country.

Thus to remit 10,000 Marks from Lubec to London, at 23¼ per Cent. from Lubec to Hamburg, and 13 Mks 9 S. from Hamburg to London.

Mks		Mks		Mks
If 123¼	——	100	——	10000 ?

Result, Bco Mks 8113 9 S

Mks	S		£.		Mks	S
If 13	9	——	1	——	8113	9 ?

Result, £ 598 4 8 Sterling.

PRUSSIA.

BERLIN.

30 Silver Groschen   =   1 Prussian Dollar, or Thaler.

The Prussian Dollar used until lately to be divided into 24 Good Groschen.

The value of the Dollar is obtained from the Standard Rate of 14 Dollars being coined from 1 Cologne Mark weight of fine Silver, from which the value of the Dollar is 2 s 10¾ d Sterling, and the Par of Exchange P. D. 6 27 S. G. per £ Sterling.

The Gold Coins are the Friedrichsd'or and Half Friedrichsd'or. 20 Friedrichsd'or are now valued at 113⅓ Thalers, and their full mintage value is 16 s 5½ d Sterling.

The Silver Coins are Thalers, with pieces of 10, 5, and 2½ Silver Groschen.

See the moneys of the Zoll-Verein States.

WEIGHTS AND MEASURES

The Commercial Pound of 2 Marks (Silver weight), or 32 Loth, each of 4 Quentchen, is equal to 467.71 Grammes, or 7218.6 Grains Troy; the Berlin or Prussian Mark being equal to 233.855 Grammes, or 3609.32 Grains Troy.

The Prussian Centner is 110 Pounds, and in Wool weight it is divided into 5 Stein, each of 22 lb.

The Schiffslast is 4000 Prussian Pounds, according to the Royal Ordinance, though generally reckoned at 36 Centner, or 3960 Pounds.

100 lb. Pruss.	=	103.124 lb. Avoirdupois.
110 —	=	113.436 — —
100 Centner	=	101.282 Cwt. —
100 lb. Avoirdupois	=	96.971 lb. Prussian.
100 Cwt. —	=	98.734 Centner —
1 Ton —	=	19 746 — —

Liquid Measures.—The contents of the Prussian Quart are 64 Prussian Cubic Inches, or the 27th part of the Cubic Foot, equal to 69.879 English Cubic Inches, to 1.14503 Litre, or 0.252021 Imperial Gallon. The Fuder of Wine is 4 Oxhoft, 6 Ohm, 12 Eimern, 24 Ankern, or 720 Quart, each of 2 Oesel. The Eimer of 60 Quarts is therefore equal to 15.1212 Imperial Gallons, or 68.7 Litres.

100 Imperial Gallons = 396.791 Pr. Quart = 6.613 Eimern.
100 Prussian Quart = 25.20 Imperial Gallons.

The Tun used for Beer is 100 Quarts, or 114.5 Litres.

Dry and Corn Measure.—The Prussian Scheffel is 3072 Prussian Cubic Inches, 9 Scheffel being equal to 16 Prussian Cubic Feet. It is divided into 16 Metzen, each containing 192 Cubic Inches, or 3 Prussian Quarts, and to 0.549614 Hectolitre, or 1.51213 Imperial Bushel.

100 Scheffel   =   18.9016 Imp Quarters.
100 Imp. Quarters = 529.055 Pruss. Scheffel

A Malter is 12 Scheffel, equal to 2.268 Imp. Quarters.
A Winspel is 2 Malter, equal to 4.536 Imp. Quarters.
A Last of Wheat is 3 Winspel, of Oats and Barley 2 Winspel.
A Tonne of Salt, Coals, and other coarse articles, is 4 Winspel.

Measures of Length.—The Prussian Foot of 12 Inches is of the same standard as the Rhineland Foot of 139.13 old Parisian lines, or 313.8536 Millimetres, equal to 12.35668 English Inches, or 1.02973 English Foot.

The Prussian Ell is 25¼ Prussian Inches, equal to 26.2584 English Inches. The Ruthe is 12 Prussian Feet, or 12.35668 English Feet. A Prussian Mile is 2000 Ruthen, or 8237.8347 English Yards, or 4.68056 English Miles.

100 Prussian Ells   =   72.939 English Yards.
100 English Yards   = 137.101 Prussian Ells.

The Morgen, Land Measure, is 180 square Ruthen, equal to 3053.78 English Square Yards, 0.630945 English Acre, or 2 Roods 20.95 Poles Statute Measure.

COURSE OF EXCHANGE.

Berlin gives to

London	P. D.	6 24¾ Gr.	for	1 £ Sterling.
Amsterdam	—	143.3-10ths	—	250 Florins .
Augsburg	—	56.20	—	100 Florins.
Frankfort	—	55.28 Gr.	—	100 Z. V. Gulden.
Hamburg	—	152.2	—	300 Marks Banco.
Paris	—	81.2	—	300 Francs.
St. Petersburg	—	98⅛	—	100 Silver Rubles.
Vienna	—,	7¼	—	100 Florins, effective.

The Usance for Bills is 14 days after sight. The days of grace are 3.

N.B. The Money of Account, and the Weights and Measures throughout the Prussian dominions, are now uniformly regulated by the Berlin Standard.

EXAMPLE.

To exchange £ 500 Sterling into Prussian Currency at
P. D. 6 28½

$$
\begin{array}{r}
\text{D. Gr.} \\
6\ \ 28\tfrac{1}{2} \\
100 \\
\hline
695\quad 0 \\
5 \\
\hline
\end{array}
$$

P. Doll.   3475   0

REVERSE.

To exchange P. Doll. 3475 0 at 6 28½

	D. Gr.	£	D. Gr.
If	6 28½ ——	1 ——	3475 0 ?
	208 Gr.		104250 Gr.
	417 ½ Gr.		208500 ½ Gr.

£

417) 208500

£   500 0 0 Sterling.

EXERCISES.

Exchange

Ex. 1.   £ 1000 Sterling into Prussian Currency at 7 1¼
    2.   £ 807 18 6 into Prussian Currency at 6 21½
    3.   Pruss. D. 8000 into Sterling at 6 27⅓
    4.   Pruss. D. 4382 16 into Sterling at 6 23

PRODUCTS.

Ex. 1.   P. D. 7041 20   Ex. 3.   £ 1156 12 6
    2.   P. D. 5426 17   4.   £ 647 13 4

ZOLL-VEREIN STATES.

Previous to the year 1837, each of these confederate states had its own code of laws, for the payment of duties on merchandise, either upon its importation, or upon its transit to other states. The importation of goods of foreign production or manufacture into some territories at low rates of duty, while they were either nearly or entirely prohibited in others, formed a source of great jealousy and annoyance ; and therefore Prussia, being the most aggrieved by this dissociation of interests, proposed a remedy which formed the basis of a convention, that was entered into at Munich, on the 23rd of August of the foregoing year, between that state and the governments of Bavaria, Wurtemberg, Baden, Hesse, Nassau, and the free state of Frankfurt, to the conditions of which other states have at various periods given their adherence.

The Northern States are, the Kingdoms of Prussia, Saxony, and Hanover, Electorate of Hesse, Grand Duchy of Saxony, Duchies of Saxe-Altenburg, Saxe-Gotha, Brunswick, Oldenburg with Birkenfeld, Anhalt-Dessau-Gotha, and Anhalt-Bernburg, in the Principalities ; of Schwarzburg-Sondershausen and Schwartzburg-Rudolstadt, Waldeck and Pyrmont, Reuss (elder branch), Reuss (younger branch), Schaumburg-Lippe and Lippe.

The Southern States are Kingdoms of Bavaria and Wurtemberg, Grand Duchies of Baden and Hesse, Duchy of Saxe-Coburg, in the hereditary Prussian States, Duchy of Nassau, Principality of Schwartzburg-Rudolstadt, Electorate of Hesse-Homburg, and the Free City of Frankfort.

The purport of the chief of these conditions is as follows :—

A tariff of duties is formed by the consent of the confederated states, and is capable of being altered or modified every four years ; and goods imported from any other state, having once paid the prescribed duty at any one of the places appointed as custom-towns, are to be free of all other importation and of all transit duty from one to the other of these states.

Goods, therefore, which are the production or manufacture of either of the Zoll-Verein States, are exempt from duty in passing into another state, in the same manner as in passing from one

town to another in the same state. Transit dues are, however, payable on foreign goods passing through the confederated states into any state not belonging to the Union.

All the customs are collected by Zoll-Verein officers throughout the Union, and the net proceeds are yearly distributed among the confederated states, according to the census of their population.

A uniform system of weights and measures for the estimation of the duties is adopted throughout, and these duties are paid in a currency based upon the following system .—

The new money of the Zoll-Verein States is based upon the Zoll-Verein pound of fine silver being coined into 30 Thalers for the Northern States, called Nord-Deutsche Wahrung, or North German valuation, 45 Florins or Gulden for Austria, and into 52½ Florins for the Southern States; this latter is called Sud-Deutsche Wahrung, or South German valuation. These Florins are of nearly the same value as the late ones.*

One pound of fine Silver will be also coined into 15 pieces of the respective values of 2 Thalers, 3 Austrian Florins, or 3½ S.-D. W., for these united Currency States; and also Gold coins under the name of Crowns and Half-Crowns.

The Crown will be $\frac{1}{50}$th of a Zoll-Verein pound of fine Gold, the value will be about 27s. 4d, but this will vary according to the price of Gold.

The fineness of all these new coins is 9-10ths.

The weight for the customs-union is the Zoll-Verein Centner of 100 Z. V. Pounds; it is equal to 50 Kilogrammes of French weight, and to 110·24, or very nearly 110¼ lb. Avoirdupois.

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100 lb. Avoirdupois  =    90.71 called  90¼ Z.V. lb.
112        —         =   101.59   —     101½   —
```

The measures, when required, are those of Prussia, but the greater part of the duties are regulated by weight.

One of the consequences of the Zoll-Verein Convention has been to introduce an approximation to uniformity in the weights and measures of the German States. In the north, the tendency is to adopt those of Prussia; and in the south, those of France.

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* See page 71.

HANOVER.

12 Pfennigen	=	1 Groschen.
24 Gute Groschen	=	1 Thaler.

Since the 1st January the Hanoverian Thaler has been the same value as the Prussian Thaler, or 2 s 10¾ d Sterling, but it is commonly reckoned at 3 s Sterling, making 1 Good Groschen equal to 1½ d Sterling. In large sums it is, however, usual to reckon 7 Thalers to the Pound Sterling.

WEIGHTS AND MEASURES.

Weights —The Hanoverian Pound is the same in weight and in Divisions as the Prussian Pound, but the Hanoverian Centner is only 100 Pounds.

Dry Measures.—The contents of the Himten of 4 Metzen is 2160 Hanoverian Cubic Inches, equal to 31.1516 Litres, or 6.85646 Imperial Gallons. The Last is 16 Malter, or 96 Himten, and is equal to 29.9056 Hectolitres, or 10.2847 Imperial Quarters.

Liquid Measures.—The Stübchen, of 2 Kannen or 4 Quartier, is the 8th part of the Himten, and contains 3.89396 Litres, or 0.85705 Imperial Gallon. The Ohm is 4 Anker, or 40 Stübchen, and is equal to 155.758 Litres, or 34.2823 Imperial Gallons.

Long Measures —The Hanoverian Ell of 2 Feet, or 24 Inches, is equal to 0.58419 Metre, or 23.0001 English Inches, 100 Hanoverian Ells being equal to. 63.8892 English Yards.

The Klafter is 6 Feet, the Ruthe 16 Feet, the Mile 1587½ Ruthen, or 25.400 Feet, equal to nearly 4 Miles 5 Furlongs English statute measure.

EXCHANGES

The Exchange transactions of and with the kingdom of Hanover, are mostly conducted through the agency of Hamburg or Bremen.

MECKLENBURG SCHWERIN.

ROSTOCK, WISMAR.

MONEYS.

12 Pfennig	=	1 Schilling.
2¼ Schilling	=	1 Neue Thaler.

Previous to the year 1830 the Thaler of account was valued at 48 Schilling, or 3 Marks each of 16 Schilling.

The Neue Thaler is the same as the coin called Zwey-drittel, or 2-3rd piece, its value in Sterling is 2 s 3.09 d, making 8 Thalers 20 Sch. equal to the £ Sterling.

WEIGHTS AND MEASURES.

Weights.—The proper Mecklenburg Pound, of 16 Ounces or 32 Loths, is the same as that of Lubec, and is therefore equal to 484.612 Grammes, 7479.5 Grains Troy, or 1.0685 lb. Avoirdupois.

The Rostock retail Pound, the same as that of Hamburg, is 484.477 Grammes, 7477.41 Grains Troy, or 1.0682 lb. Avoirdupois.

The Rostock market or town weight is 5 per Cent heavier than the preceding weight, and the Pound of this weight is consequently equal to 508.7 Grammes, 7851.28 Grains Troy, or 1.1216 lb. Avoirdupois.

The Rostock Liespfund is 14 lb. The Centner is 8 Liespfund, or 112 lb. The Schiffpsfund is 2½ Centner, or 280 lb., or for the carriage of goods, 20 Liespfund of 16 lb. each.

Liquid Measures.—The same as those of Hamburg.

Dry and Corn Measures.—The Mecklenburg Corn Last, of 8 Drömt or 96 Scheffel, is equal to 102.71 Bushels or 12.8389 Quarters, Imperial measure; 100 Rostock Scheffel being equal to 106.991 Imperial Bushels. The difference that formerly existed between the Scheffel for Wheat and the Scheffel for Oats has been abolished, only the above measures being now used.

Long Measure.—The Mecklenburg Ell of 2 Feet is the same as the Hamburg Ell.

EXCHANGES.

The Exchange transactions of Rostock are chiefly conducted through the medium of Hamburg, the Par of Exchange between the two places being 154½ Marks Banco for 100 Neue Thalers, or with an Agio of nearly 3 per Cent. upon the assured Par of 150 Marks Banco for 100 Neue Thalers.

BRUNSWICK.

MONEYS.

12 Pfennigen	=	1 Groschen.
24 Gute Grosehen	=	1 Thaler.

The value of the Thaler of this Duchy is the same as the Hanoverian or Prussian Thaler, or 2 s 10¾ d Sterling.

WEIGHTS AND MEASURES.

Weights.—These are the same as those of Hanover, the Pound being that of the Prussian, and the Centner of 100 lb. being equal to 46.771 Kilogrammes, or 103.124 lb. Avoirdupois.

Dry Measures.—The contents of the Winpel of 4 Scheffel, or 40 Himten, is equal to 12.458 Hectolitres, or 4.284 Imperial Quarters.

Liquid Measures.—The contents of the Oxhoft, of 1½ Ohm, 6 Anker, or 240 Quartier, are equal to 224.84 Litres, or 49.49 Imperial Gallons.

Long Measures.—The Ell of 2 Feet or 24 Inches is equal to 0.570725 Metres, or 22.47 English Inches; 100 Ells being equal to 62.4166 English Yards, 8 Brunswick Ells being nearly equal to 5 English Yards.

OLDENBURG.

MONEYS.

5 Schwaren	=	1 Grot.
72 Groten	=	1 Thaler.

The value of the Thaler was the same as that of Bremen; but, since the year 1827, the German Pistole has been rated at 5 Th. 40 Gr., giving an Agio of 11⅓ per Cent. upon the former valuation, and reducing the value of the Thaler to about 35½ d Sterling. In mercantile affairs the rating of the Thaler makes its value about 36 d Sterling.

WEIGHTS AND MEASURES.

Weights.—The Oldenburg Pound is now the same as that of Prussia, the Centner of 100 lb. being very nearly equal to 103⅓ lb. Avoirdupois. The Pfundschwer is 3 Centner. The Schiffspfund is 29 Liespfund, each of 10 lb.

Liquid Measures.—The Oxhoft is 1½ Ohm or 6 Anker, each of 20 Kannen. The contents of the Anker are equal to 38.1652 Litres, or 84 Imperial Gallons.

Dry Measures.—The Corn Last of 12 Molt, 18 Tonnen, or 144 Scheffel, is equal to 32.836 Hectolitres, or 11.292 Imperial Quarters

Long Measures.—The Oldenburg Ell is nearly 22⅞ English Inches, 100 Ells being equal to 58.0876 Metres, or 63 5266 English Yards. 100 Feet are equal to 29.5879 Metres, or 97.075 English Feet.

EXCHANGES.

The Exchange transactions of Oldenburg are conducted through the medium of Bremen.

BAVARIA.

MUNICH, AUGSBURG, NURNBURG.
MONEYS.
1 Gulden = 60 Kreuzen.
1 Kreuzer = 4 Pfennige.

The value of Money of Account in Bavaria is now in Süd-Deutsche Währung, making the Gulden equal to $19\frac{5}{10}$ d Sterling, or 12·0551 Gulden, equal to £1 Sterling.

WEIGHTS AND MEASURES

The Bavarian Pound is equal to 560 Grammes, or 8642 Grains Troy, making the Bavarian Centner of 5 Stein or 100 lb. equal to 123.457 lb. Avoirdupois.

The Rheine Bavarian Centner or Quintal is 100 Kilogrammes, or 220.4 lb. Avoirdupois.

The Eimer contains 64 Mass, and is equal to 68.418 Litres, or 15 0588 Imperial Gallons. The Barrel of Beer contains 25 of these Eimers.

100 Bavarian Feet = 29.19 Metres, or 95.76 English Feet.
100   —   Ells = 83.30   —   or 91.10   —   Yards

London	12 15	Florins and Kreuz. for	1	£ Sterling.
Amsterdam	59¾	Kreuzers	—	1 Neth. Florin.
Augsburg	119½	Florins	—	100 Florins Aug. Cur.
Frankfort	99¼	Florins	—	100 Florins in 24 G. F.
Geneva	100½	Francs	—	100 Francs in Geneva.
Hamburg	151	Kreuzers	—	3 Marks Banco.
Leipzig	172	Florins	—	100 Dollars P. C.
Leghorn	24½	Kreuzers	—	1 Lira Toscana.
Milan	25¼	Kreuzers	—	1 Lira Austriaca.
Paris	101	Francs*	—	100 Francs in Paris.
Turin	28¼	Kreuzers	—	1 Lira Nuova.

* The Par with Genoa and Paris is 297 Florins for 640 Francs

AUGSBURG.

60 Kreuzers	=	1 Florin.

The Florin in Augsburg Currency is valued after the Convention Rate, or the 20 Guldenfuss; it is therefore the same as the Austrian Florin, or 2 s 0.4 d Sterling, and the Par of Exchange with London is 9 Fl. 50 Kr. per £ Sterling.

In the Exchanges of Augsburg upon Amsterdam and Hamburg there is a nominal value, called Giro, given to the Florin, by which 127 Florins, Convention Money, or Augsburg Currency, are reckoned equal to 100 Florins in Giro.

WEIGHTS AND MEASURES.

100 lb heavy weight	=	108.30 lb Avoirdupois.
100 lb light weight	=	104.23 lb Avoirdupois.
The Muid of 48 Máss	=	15.08 Imperial Gallons.
The Schaff of 8 Metzen	=	5.65 Imperial Bushels.
The Long Ell	=	24.00 English Inches.
The Short Ell	=	23.32 English Inches.

Augsburg gives to or *receives from*

London	Flor. 9.50 Kr.	for	1 £ Sterling.
Amsterdam	Rixd. 108¼ in Giro	—	250 Florins.
Frankfort	Flor. 99¾ Current	—	100 Florins in 20 G. F.
Genoa	*Soldi 51 di Lira N.	—	1 Florin.
Hamburg	Rixd. 114¾ in Giro	—	300 Marks Banco.
Milan	*Soldi 50½ di Lira N.	—	1 Florin.
Leghorn	*Soldi 50¼ di Lira N.	—	1 Florin.
Paris	Flor. 117¼ Current	—	300 Francs.
Vienna	Flor. 99¾ Current	—	100 Florins in Vienna.

Or Lire for 20 Florins.

SAXONY.

DRESDEN AND LEIPZIG.

10 Pfennige	=	1 Neu-Groschen.
30 Neu-Groschen		1 Dollar or Thaler.

The Saxon money of account in Dollars and Groschen has, since the 1st January, 1841, been rated upon the Prussian Standard, or the 14 Thaler-fuss.

WEIGHTS AND MEASURES.

100 Saxon Pounds	=	103.10 lb Avoird.
100 Dresden Kannen	=	20.59 Imp. Gallons.
100 Dresden Scheffel	=	35.73 Imp. Quarters.
100 Saxon Ells	=	61.94 Yards.

Leipzig, in 14 Thaler-Fuss, gives to

London	Doll.	6	18½ N. G. for	1	£ S
Amsterdam	—	137½	—	250	Flo
Augsburg	—	101½	—	150	Flo
Berlin	—	99¾	—	100	Pr.
Bremen	—	109¼	—	100	Rix
Frankfort	—	101½	—	100	Rix
Hamburg	—	150	—	300	Mai
Paris	—	79	—	300	Fra
Vienna	—	101½	—	150	Flo

N. B. The rate at which the late money of account in 20 Guldenfuss, was converted into the present money in 14 Thaler-fuss, was, officially, 2½ per Cent, 100 Dollars in 20 Gulden-fuss being valued at 102½ Dollars in 14 Thaler-fuss.

AUSTRIA.

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VIENNA AND TRIESTE.

100 Kreuzer   =   1 Florin, or Gulden.

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(See Page 65 for account of new currency.)

The value of the money of account is that called Convention, or 20 Guldenfuss, in which, as before remarked, the Cologne Mark weight of fine Silver is supposed to be coined into 20 Florins.

The value in Sterling of the Florin at this rate is 2 s $0\frac{4}{10}$ d, from which the Par of exchange with London is 9 Fl. 50 Kr. per £ Sterling.

The Currency of Austria is of both Paper and Metal. The Paper money, called Wiener-Wahrung, or Vienna-Value, is at a fixed Discount of 60 per Cent.; by which 100 Florins in Cash are equal to 250 Florins in W. W.

Bills upon Vienna are generally directed to be paid in effective—that is, in Cash—to guard against their being paid in Paper money of the depreciated value.

The Gold Coins are Ducats, the full value of which is 9 s $4\frac{3}{4}$ d; and the Souverain d'Or, of the value of 27 s $10\frac{1}{2}$ d Sterling.

The Silver Coins are Thalers, each of 2 Gulden, frequently called Austrian or German Dollars, or Tallari; 1-Gulden pieces, and pieces of 20, 10, 5, and 3 Kreuzer.

The nominal value of the Souverain d'Or is $13\frac{1}{3}$ Florins, and of the Ducat, $4\frac{1}{2}$ Florins; but these Coins bear a higher mercantile value, or sell at a premium for Silver money.

WEIGHTS AND MEASURES.

Weights.—The Vienna Pfund is 32 Loth, and is equal to 560.012 Grammes or 1.2347 lb. Avoirdupois. The Centner is 100 Pfund, and the Stein or Stone, 20 Pfund.

100 Vienna Pfund	=	123.47 lb. Avoirdupois.
100 lb. Avoir.	=	80.99 Vienna Pfund.
112 —	=	90.71 —
100 Vienna Marks	=	28.0644 Kilogrammes, or 902.28 Troy Oz.

and 5 Vienna Marks make 6 Vienna Cöln Marks.

Dry Measures.—The Vienna Metzen, of 4 Viertel, 16 Massel, or 128 Becher, contains 1.9471 Vienna Cubic Feet, equal to 61.49945 Litres.

100 Vienna Metzen	=	21.15 Imp. Quarters.
100 Imp. Quarters	=	472.81 Vienna Metzen.

Liquid Measures.—The Eimer of Wine is 41 Vienna Mass, and contains 58.0156 Litres.

100 Vienna Mass	=	31.14 Imp. Gallons.
10 Eimer	=	127.69 —
100 Imp. Gallons	=	7.83 Vienna Eimer.

Long Measure.—The Vienna Ell is 2.465 Vienna Feet, and contains 0.77919 Metre, or 30.62236 English Inches; 100 Feet contain 31.61 Metres, or 103.71 English Feet. An Austrian Mile is nearly $4\frac{3}{4}$ English Miles, or 7586.46 Metres.

100 Vienna Ellen	=	85.21 English Yards.
100 English Yards	=	117.34 Vienna Ellen.

The Weights of Trieste are the same as those of Vienna; they are generally called *Funti weight*, from the German word *pfund*.

Corn is sold by the Stajo or Staro, which contains 82.61 Litres.

100 Stari of Trieste	=	28.41 Imp. Quarters.
100 Imp. Quarters	=	351.98 Stari.

Wine is sold by the Orna of 36 Boccali, and contains 65.66 Litres, or 14.45 Imperial Gallons; 100 Imperial Gallons equal to 6.92 Orne. Oil is commonly sold by weight. Oil of the inferior sort is sold by the Orna of 107 Funti, which render about $14\frac{2}{3}$ Imperial Gallons, or $17\frac{1}{6}$ Orne, equal to the Tun of

252 Gallons. The Orna of the finer sort is only 103 Funti, which render about 14⅛ Imperial Gallons, or 17⅜ Orne, equal to a Tun.

For the measurement of Woollen Goods, the Braccia is reckoned as 3-4ths of an English Yard. 100 Braccia contain 67.67 Metres, or 74.01 English Yards. For Silk Goods, 100 Braccia contain 64.20 Metres, or 70.21 English Yards.

The Money Weights and Measures of Fiume are the same as those of Vienna; but, in the purchase of Oil, the Barill is reckoned to weigh 110 Vienna Pounds, though it is invoiced for exportation at 107 of these Pounds, as the Orna for common Oil at Trieste.

The Money Weights and Measures of Austria are those now used in Ragusa. The Turkish Occa or Oke, here reckoned to be equal to 2½ lb. of Vienna, making 100 Okes equal to 308⅜ lb. Avoirdupois, is employed in weighing Turkish goods. The Venetian Libbra, Pesogrosso, is also used for country produce.

The present medium of circulation consists exclusively of Bank Notes; namely, those of Austrian currency and those of Convention Money Notes; the latter are very seldom met with in Vienna, they are chiefly confined to the provinces.

A large portion of the Convention Money in the 20 Guldenfuss is still in circulation; in common business transactions the precious metals are not to be met with at present, there being only the 6 Kreuzer Convention pieces, which have a legal currency for 10 New Kreuzers. Gold and Silver have an agio of 30 per cent.

The New Gold Coins are the Zoll-Verein Crowns and Half-Crowns.

The New Silver Coins are Florins or Gulden, 45 of which are coined from the Zoll-Verein pound of pure Silver; they consist of 2 and 1 Gulden pieces and Quarter-Florins of the purity of 9-10ths, and are of nearly the same value as the late coins, 100 Old Florins being equal to 105 New Florins. The par of Exchange in Silver is 10 Flor. 32.

The 10 and 5 Kreuzer pieces are made of an inferior metal, and are merely tokens. The late 6 Kreuzer pieces are now current for 10 Kreuzer new valuation.

The Ducats of the Old Standard will be issued to the end of 1865, and are equal to 4 Flor. 50 Convention Money.

COURSE OF EXCHANGE.

Vienna, in effective, gives to or *receives from*

London	131.80	Flor. and Kr. for	10 £ Sterling.
Amsterdam	105¼	Florins	— 100 Netherland Flor.
Augsburg	113.25	Florins	— 100 Florins.
Constantinople	425	Paras	— 1 Florin.
Frankfort	113.16	Florins	— 100 Florins.
Genoa	52.56	Florins	— 100 Lire Nuove.
Hamburg	99.75	Florins	— 100 Marks.
Leghorn	52.62	Florins	— 100 Lire Toscane.
Milan	52.62	Florins	— 100 Lire.
Naples	58½	Grani	— 1 Florin.
Paris	52.60	Florins	— 100 Francs.

The Usance of Bills is 14 days.

The days of Grace are 3, reckoned as in England, Bills not being presented for payment until the third day after that on which the regular time expires.

F

EXAMPLE.

To exchange £ 456 17 8 Sterling into Florins at 10 1

| £ | s | d | | £ |
| 456 | 17 | 8 | = | 456.8833 |

Florins.

$_{6}^{1}{}_{0}$ - - 456.8833
                      10

                  4568.833
                     7.614
              _____

Flor. 4576.447 or 27 Kr.

The decimal .447 of a Florin is valued in Kreuzers by multiplying it by 60.

REVERSE.

To exchange Florins 4576 27 into Sterling at 10 1

| Fl. Kr. | | £ | | Fl. | Kr. |
| If 10 1 | —— | 1 | —— | 4576 | 27 ? |

601 Kr.   274587 Kr.
                        £
            601) 274587

                £ 456 17 8 Sterling.

EXERCISES.

Ex. 1. £ 1000 Sterling into Florins at 9 57½
    2. £ 216 12 6 into Florins at 10 2
    3. Flor. 4484 20 into Sterling at 10 1
    4. Flor. 5000 0 into Sterling at 10 1¼

PRODUCTS.

Ex. 1. Flor. 9958 20 Kr.   Ex. 3. £ 447 13 9
    2. Flor. 2173 28 Kr   4. £ 498 19 2

FRANKFORT ON THE MAINE.

60 Kreuzers = 1 Florin or Gulden.

The money of exchange and account is, according to the stipu-
lations of the Convention of 1857, entered into by the States
forming the German Zoll-Verein, or Customs-Union, based upon
the valuation called Sud-Deutsche Wahrung, or South German
valuation, in which the Zoll-Verein pound (equal to 7716 Grains)
of fine Silver is coined into 52½ Florins or Gulden. The value
of the Florin is, at the rate of 60d. per oz. Standard, 19.86d,
being very nearly the same as the Florin of the Convention of
1843, which was coined from the Cologne Mark (equal to 3609
Grains) into 24½ Florins. The fineness of the coins is 9-10ths
of pure Silver with 1-10th alloy. The Par of Exchange is
120.84 Flor. per £10 Sterling.

COURSE OF EXCHANGE.

Frankfort gives to

Amsterdam	99¾	for	100	Florins.
Antwerp	93¼	—	200	Francs.
Augsburg	99¾	—	100	Florins.
Berlin	105⅙	—	60	Thalers.
Bremen	95¼	—	50	Louis d'or R. D.
Brussels	93¼	—	200	Francs.
Cologne	105	—	60	Thalers.
Hamburg	88¼	—	100	B. Marks.
Leipsig	105¼	—	60	Thalers.
London	117	—	10	£ Sterling.
Milan	93¼	—	200	Francs.
Munich	99¾	—	100	Florins.
Paris	93	—	200	Francs.
Trieste	86⅛	—	100	Florins.
Vienna	86¼	—	100	Florins.

The late Money of Account was in the valuation called the 24 Guldenfuss, or Reichsgeld,* by which the value of the Florin was equal to 20.32 d. Sterling, and the Par of Exchange was 118.1 Florins, or 118 Florins 6 Kreuzers, for £10 Sterling.

The late Money of Exchange was chiefly in a valuation called Wechsel-Zahlung,† or Exchange Valuation, by which 46 Florins, each of 15 Batzen, in W. Z., were reckoned equal to 55 Florins in 24 Gf., and, by another mode of reckoning, 276 Florins in W. Z., were valued at 275 Florins in the rate called Conventions-Münze or the 20 Guldenfuss.

WEIGHTS AND MEASURES.

The new Zoll-Centner of 100 Pounds Duty-Weight, is 50 Kilogrammes, and is equal to 98.94 lb. Heavy Weight, or to 106.85 lb. Light Weight, or to 110.24 lb. Avoirdupois.

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* The rate of the 24 Guldenfuss was not represented by coins minted upon this Standard, but it was formed by giving to the money coined according to the 20 Guldenfuss, or 20 Florins out of a Mark weight of fine Silver, an increased nominal valuation, and thus the Zwanziger, or 20-Kreuzer Piece, was valued at 24 Kreuzers in 24 Guldenfuss The new Suddeutsche Wahrung, the present exchange money of Frankfort, is very commonly, though incorrectly, termed the 24-Guldenfuss, in which rate the Prussian Thaler is worth, accurately, 102 6-7ths Kreuzers, while in S. D.W. it is worth 105 Kreuzers The same error of denomination was inadvertently employed in valuing the Thaler, page 26, 4th Edition of this work ; but, in excuse, it is to be said, that the passage was an exact translation of a communication from Frankfort, and that, indeed, it is still stated in many documents on exchange valuations, even from that place, that the exchange money of Frankfort is now in the 24-Guldenfuss. (See the observations on the Course of Exchange in page 70.)

† Wechselzahlung was originally formed by the peculiar valuation of the Carolin or Louis d'or, which was rated in exchange payments, in Frankfort, at 9 Flor 12 Kr. in W. Z., while it was rated at 9 Flor. 10 Kr. in 20 Guldenfuss, or at 11 Florins in 24 Guldenfuss.

The Par of Exchange with London, at 120.56 Florins in S. D. W. for £10 Sterling, is equal to 148.16 Batzen in W Z. per £ Sterling.

There are two sorts of weights used in Frankfort, called the heavy and the light weight. The Centner contains 100 lb. of heavy weight, or 108 lb. of light weight used for goods sold by the Pound, while the former is used for goods sold by the Centner: 100 lb. heavy weight equal to 50.535 Kilogramme, or 111.41 lb. Avoirdupois, and 100 lb. light weight equal to 46.791 Kilogramme, or 103.16 lb. Avoirdupois.

100 lb. Avoird. = 89.76 lb. heavy weight = 96.94 lb. light wt.
112 lb. — = 100.52 lb. — = 108.57 lb. —

Liquid Measures.—There are two sorts of liquid measures, one for the sale of Wine and Brandy, called the Old Measure, and the other the New, used for various purposes.

The Ohm of 20 Viertel contains 80 Old Mass, and is equal to 143.43 Litres, or 31.57 Imperial Gallons.

100 Old Mass = 39.46 Imperial Gallons.
100 New — = 35.39 —

100 Imperial Gallons = 221.2 Old Mass = 253.4 New Mass.

Dry Measures.—The Malter or Achtel, of 4 Simmer or 8 Metzen : 100 Malter are equal to 114.740 Hectolitres or 39.459 Imperial Quarters.

100 Simmer = 78.94 Imp. Bushels.
100 Imperial Bushels = 126.67 Simmer.

Long Measures.—The Foot contains 12 Inches, each of 12 Lines. 100 Frankfort Feet equal to 28.461 Metres, or 93.378 English Feet.

The Frankfort Ell is equal to 547.3 Millimetres : besides this the Brabant Ell and the old Parisian Aune (Pariser Staub) are partly used.

100 Frankfort Ells = 59.85 English Yards.
100 Brabant Ells = 76.46 —
100 Parisian Aunes = 129.97 —

COURSE OF EXCHANGE.

With the Par Valuations in 24 and 24½ Guldenfuss.

FRANKFORT gives in Florins, to

	24 Gf	24½ Gf. or	S. D. W.[*]		
London	118.10	120.56	120¼ fo	10 £ Sterling.
Amsterdam	98.65	100.70	98¾ —	100 Holl. Ct. Florins.
Berlin	102.85	105.—	105 —	60 Pruss. Thalers.
Bremen	—	—	96⅝ —	50 Louisd'or R. D.
Hamburg	86.48	88.28	88½ —	100 Banco Marks.
Leipzig	102.85	105.—	105 —	60 R.D. in14 Th.fuss.
Paris	92.37	94.29	93¾ —	200 Francs.
Vienna	120.—	122.50	121½ —	100 Flor. in 20 G. fuss.
Milan	100.—	102.08	101¾ —	250 Lire Austriache.

MONEY COURSE.

In Florins and Kreuzers, Suddeutscher Wahrung.

New Louisd'or	11 2 each	Laubthalers	2 43 each
Friedrichsd'or	9 39½ —	5-Franc Pieces	2 20 —
20-Franc Pieces	9 25½ —	Prussian Thalers	1 45 —
Holl. 10-Guild. Ps.	9 52½ —	Silver, per Mark 24	20 —

* The above rates of exchange in the column marked S.D W. were, with the accompanying explanations, taken from the prices for bills at Short Sight in an Exchange Course from Frankfort, dated the 26th January, 1843, in which course it is expressly stated, that the prices are given in Gulden Suddeutscher Wahrung The valuation of the Pars in 24½ Guldenfuss are taken from the following calculations, and the Pars in 24 Guldenfuss are prefixed to show that the rates of Exchange are *not* valued by this Standard, for although the Amsterdam rate for Bills is nearer to the 24 than it is to the 24½ Guldenfuss, yet, for this place, the rate of Exchange corresponds with the value in S.D.W of the 10-Guilder Piece in the Gold Course, the value of 100 Guilders at 9 Flor 52¼ Kr in S.D.W. per 10 Guilders, being 98¾ Florins S D.W. The Bremen rate is regulated by the value of the Friedrichsd'or, which being valued in Bremen at 5 Louisd'or, and in Frankfort as above, at 9 Fl. 39½ k S D.W. each, give 96.58 Florins S. D. W. for 50 Bremen Louisd'or or Rix-dollars. No Par can be given for this place, from the valuation of Silver

Bills upon Frankfort, drawn in the 24 Guldenfuss, are paid either in Crown Thalers, valued at 2 Fl. 42 Kr. each, or in Convention Thalers, valued at 2 Fl 24 Kr. each , but Bills drawn in Suddeutscher Wahrung are legally payable only in Z V Gulden and Half-Gulden.

PARS OF EXCHANGE IN SILVER.

LONDON.	AMSTERDAM.
2400 d.?	100 H. Flor.?
1 — 8 grs. St.	1 —9.6125 Grammes
40 — 37 fine.	500 — 52½ Florins.
7716 — 52½ Florins.	
Flor. 120.84 S. D. W.	Flor. 100.9 S. D. W.

VIENNA.	PARIS.
	200 Francs?
100 Flor.?	200 — 900 Grammes.
20 — 24½ Florins	500 — 52½ Flor.
Flor. 122.5 S. D. W.	Flor. 94.50 S. D. W.

NOTE.—The standards of the various moneys of the kingdoms and states in the North of Europe and Germany, had, for their common base, the Cologne Mark weight of fine silver, which, when alloyed with copper, considered of no value, was coined into the following pieces of money —

In Sweden, Norway, Denmark, Mecklenburg, &c , into 9¼ Silver-species, or Dalers or Thalers

In Russia, into 13 Silver Roubles.

In Prussia and Hanover, into 14 Thalers.

In the Southern States of the Zoll-Verein, into 24¼ Gulden.

In Austria, into 20 Gulden

In Hamburg and Lubec, into 34 Marks current.

From the first of these rates is derived the valuation of Hamburg Banco , for the Species-daler being, at its full rate, equal to 3 Marks Banco, it makes 27¾ Marks for the rate of Hamburg Banco.

To find the value in Sterling of each of these monetary integers, we may rate the Cologne Mark weight of fine silver at 60d per ounce standard, by which its value becomes 487½d Sterling, and then this amount, divided by the number of the pieces in the foot or base, will give the value in English money of each piece.

To find the value in Sterling of the New German Monetary System, at 60d. per ounce Standard the Z. V pound would be 86s. 10.27d., and this amount, divided by 30, 45, and 52½, gives the respective values.

LONDON ON FRANKFORT.

To exchange £454 17 10 Sterling into Florins S. D. W. at 121⅝.

£		Fl.		£	s.	d.
If 10	——	121⅝	——	454	17	10?

Flor.   109174 d.
454.892   (or)
121⅝   Flor.
——————   109174
5504.1932
22.744
5.686   2400) 13278287

Flor. 5532.62 = 37 kr.   Flor. 5532 37 kr.

REVERSE.

Flor.		£		Flor.	kr.
If 121⅝	——	10	——	5532	37?

973   44260 56

              £   £   s.   d.
973) 44260.93 (454 17 10 Sterling
      5340   ——————
      4759
       8673 (.891
        889
         13

SWITZERLAND.

100 Cent.   1 Franc.

The value of the Franc is the same as that of the French Franc, or 9½ d. Sterling. The Coins are the same as those of France, with pieces of 5, 10, and 20 Cents. in Nickel.

WEIGHTS AND MEASURES.

100 lb. of Geneva   121.41 lb, Avoirdupois.
The Setier   10.06 Imperial Gallons.
The Coupe or Sack   2.14 Imperial Bushels.
The Ell   45.04 English Inches.

The Metrical System is soon to be introduced.

COURSE OF EXCHANGE.

Geneva gives to

London	25.45	Francs for	1 £ Sterling.
Amsterdam	209	— —	100 Florins.
Augsburg	256	— —	100 Florins.
Florence	84	— —	100 Lire Toscane.
Frankfort	210	— —	100 Florins in 24 G. f.
Genoa	½ per Cent. loss.		
Hamburg	186	Francs for	100 Marks Banco.
Leghorn	84½	— —	100 Lire Toscane.
Milan	85	— —	100 Lire Austriache.
Naples	431	— —	100 Ducats.
Paris	½ per Cent. loss.		
Rome	535	— —	100 Scudi.

The Usance for Bills from England is 30 days' sight.

DENMARK.

MONEYS.

96 Skilling   =   1 Rigsbank Daler.

The Money of Account throughout the kingdom of Denmark, with the exception of mercantile and banking Accounts in Altona, is in Rigsbank Daler and Skilling, the Rigsbank Daler being also divided into 6 Mark, each of 16 Skilling.

For some purposes, as for the Sound Dues, the Species or Specie Daler is used; it is equal in value to 2 Rigsbank Daler, and is divided into 48 Styver, each of 4 Skilling.

The Specie Daler is in value equal to 4 s. 4.71 d. Sterling, and the Rigsbank Daler to 2 s. 2.35 d. Sterling, making the Pound Sterling equal to Sp. Dr. 4 26½ Styv., or to Rigsb. Dr. 9 10 Sk. Danish.

The Paper Currency of Denmark consists of Notes of the National Bank for 100, 50, 10, 5, and 1 Rigsbank Daler. These Notes are at Par.

WEIGHTS AND MEASURES.

Weights.—The Danish or Copenhagen Mark, used in the sale of Gold and Silver, is divided into 8 Unzer or Ounces, 16 Lod or 256 Ort, and its weight, according to the Consular Standard, is equal to 3633 Grains Troy, or 235.389 Grammes.

100 Danish Marks = 756.875 Oz. Troy.

The Danish Pound Commercial Weight is divided into 16 Ounces or 32 Lod. It is equal to 17 Ounces Bullion Weight, and therefore to 7720 Grains Troy, or 500.2 Grammes.

100 lb. Danish = 110.28 lb. Avoirdupois.
100 lb. Avoird. = 90.67 lb Danish
112 lb. Avoird. = 101.55 lb. Danish.

The Danish Centner is 100 lb. The Skippund is 20 Lispund, each of 16 Pund, and is equal to 352.89 lb. Avoirdupois.

It is usual to reckon 8 Skippund equal to 25 Cwt. English. The Bissmar Pound is 12 Danish Pounds. The Vog is 36 Danish Pounds. The Skepplast 4000 Danish Pounds. The Last is 16¼ Skippund, or 5200 Danish Pounds.

Liquid Measures.—The Integer of Danish Measures of Capacity is the Potte of 4 Pagle The Danish Pipe is 2 Oxhoved. The Oxhoved contains 6 Ankare, each of 5 Viertel or 40 Potter, and is equal to 51.028 Imperial Gallons, or 231.844 Litres. 10 Viertel are reckoned equal to 17 Imperial Gallons.

100 Imp. Gallons = 470.32 Potter = 58.79 Viertel.
100 Litres   = 103.52   = 12.94   —

The Danish Cubic Foot, equal to 1886.53 English Cubic Inches, contains 32 Potter or 4 Viertel.

Corn and Dry Measures.—The Tonde or Barrel contains 8 Skiepper, each of 4 Fierdinger. Its cubic contents are 4¼ Danish Cubic Feet, equal to 32 Viertel Liquid Measure, corresponding with 3.82716 Imperial Bushels, or 1.39106 Hectolitres.

The Danish Corn Last is 22 Tönder, equal to 10.527 Imperial Quarters, or 306.034 Hectolitres.

The Last of Lime, Salt, &c., is 12 Tönder, and of Coals 18 Tönder.

The Commercial Shipping Last is 80 Cubic Feet, usually reckoned 2 Tons English Ship Measure.

100 Tönder   = 47.8395 Imperial Quarters.
100 Imp. Quarters = 209.032 Tonder.

Long Measures.—The Danish Fod or Foot is the Rhinland Foot of 12 Tommer or Inches. The Danish Alen or Ell is 2 Fod, and is equal to 24.7126 English Inches, or 0.62768 metre.

100 Danish Ells = 68.646 English Yards.
100 Engl. Yards = 145.675 Danish Ells.

The Danish Mile is 12000 Alen, equal to 8237½ English Yards, or 4.6805 English Miles, or 7.5322 Kilometres.

EXCHANGES.

The transactions of Denmark in Foreign Exchanges are chiefly conducted through the medium of Altona and Hamburg, the Par being 200 Rigsbank Dalers for 300 Marks Banco.

COURSE OF EXCHANGE.

Copenhagen gives to

London	9 Rigsbank Dalers for	1 £ Sterling.
Amsterdam	190¼	—	250 Gulden.
Hamburg	200	—	300 Marks Banco.
Paris	34¼ Skillings		1 Franc.

With Christiania the Par of Exchange is 200 Rigsbank Dalers for 100 Species, and with Stockholm 48½ Rigsbank Skillings for 1 Banco.

There is no regular term of Usance.

The days of Grace are 8, which may be extended to 10, without prejudice to the holder of the Bill.

N.B.—In those mercantile and financial calculations which are used for the reduction of the rates of prices, the Par of Exchange with England is made through the medium of Hamburg Banco; some using 14 Marks Banco, which give 9¼ Rigsbank Dalers per £, and others 13½ Marks Banco, which give 9 Rigsbank Dalers per £.

Copenhagen on London.

To exchange R. b. D. 8467 37 Sk. at R. b. D. 9 10 per £.

	R.D. S.		£.		R. D. S.
If	9 10	——	1	——	8467 37?

874 Sk.   £.   812869 sk.

874) 812869

£930 1 1 Sterling.

To exchange £930 1 1 Sterling at R. b. D. 9 10 per £.

R. b. D.

$\frac{1}{12}$ - - 930

R. D. Sk.

$\frac{1}{20}$ - - 9 10

8370   44 for 1 s.

77 48 for 8 sk.   4 — 1 d

19 36 — 2

48 — 1 s. 1 d.

R. b. D. 8467 33 sk.

Copenhagen on Paris.

R. b. D. 8467 37 sk. at 34¼

R. d. 8467.37 ?

1 — 96 sk.

34¼ — 1 Franc.

Result—Frs. 23733 40

Copenhagen on Amsterdam.

R.b.D. 8467 37 sk. at 190¼

R d. 8467 37 sk.

190¼ — 250 Gulden.

Result—Gulden 11126.65

NORWAY.

MONEYS.

1 Species = 120 Skilling.

The Species or Specie Daler of Norway is of the same value as that of Denmark, and is, therefore, equal in value to 4 s. 4.71 d. Sterling, making 4 Species 33 sk. Norwegian equal to £1 Sterling.

The Specie Daler, which is equal to 2 Danish Rigsbank Daler, or 3 Marks Hamburg Banco, is sometimes divided into 5 Ort or Marks, each of 24 Skilling.

The Paper Currency of Norway is formed of Notes of the Norwegian States Bank, the chief office being at Drontheim, the ancient capital of this kingdom, for 100, 50, 10, 5, and 1 Species-dalers. Since 1841 these Notes have been at Par.

WEIGHTS AND MEASURES.

The weights and measures of Norway are in every respect the same as those of Denmark.

Deals shipped at Christiania, Dramen, Frederickshall, and Gottenborg (in Sweden), are invoiced by the Norwegian Standard Hundred of 120 pieces, each 12 Feet long, 3 Inches thick, and 9 Inches broad, English measure, the contents being 270 English Cubic Feet.

EXCHANGES.

Christiania gives, at Par, to

London	4 Species · Sk. for		£1 Sterling.
Amsterdam	95½	—	250 N. Gulden.
Hamburg	100	—	300 Marks Banco.
Paris	21⅞ Skillings	—	1 Franc.

The days of grace and the other regulations for Bills of Exchange are the same as those for Copenhagen. The formula of Exchange calculations are similar to those with Denmark, 120 Norwegian Skillings being used instead of 96 Danish Skillings.

SWEDEN.

MONEYS.

1 Daler (R. dr.)	=	48 Skillingar.
1 Skilling	=	12 Runstyken.

The Money of Account and Exchange is in Swedish Bánco, represented by the Notes issued from the States Bank established in Stockholm in the year 1777. By a Royal Ordinance of the 26th October, 1829, Banco was made the legal money, in Sweden, of payment and account, and the relative currency values of Silver Species, as represented by Silver Coins, of Banco, and of Riksgáld, or the notes formerly issued by the Royal Bank, which was represented by Copper Dalers, were fixed as follows:—

1 Species	= 2⅔ R. dr. Banco	= 4 R. dr. Riksgald.
1 R. dr. Banco	= 18 Skillingar Sp.	= 1½ R. dr. Riksgald.
1 R. dr. Riksgáld	= 12 Skill. Specie	= 1 R. dr. 32sk. Bco.

8 Dalers Banco were thus made equal to 3 Dalers Specie or to 12 Dalers Riksgäld.

It is to be observed that Riksgäld valuation is that which is chiefly used by the peasantry of Sweden, and that in contracts or orders for receipts and payments it is very necessary to specify in what sort of money the settlements are to be made. It has lately been proposed to abolish the Riksgald valuation.

The value of the Swedish Species being, at its full mintage rate, 4 s. 5.15 d. Sterling, the relative value of the R. dr. Banco is 19.93 d. Sterling, and that of the R. dr. Riksgald 13.28 d. Sterling, making the Pound Sterling equal to

4 Species	24 Sk.	8 R.	in Silver.
12 Dalers	1 Sk.	11 R.	in Banco.
18 Dalers	2 Sk.	10 d.	in Riksgäld.

N.B. The Species and the Daler, in either Banco or Riksgáld, are each similarly divided into 48 Skillingar, each of 12 Runstykén.

For the New Money, and Divisions of Weights and Measures, see page 83.

SWEDISH WEIGHTS AND MEASURES.

Weights.—The integer of the weights of Sweden, called an Ass, is generally considered to be identical with Dutch weight of the same denomination; there is, however, a slight difference.

The Swedish Gold weight is 8 Uns, 16 Lod, 64 Quentin, or 4608 Ass Gold weight. The Quintin of 72 Ass is the weight of 1 Swedish Ducat, the Mark (Guld-vigt) being the weight of 64 Ducats, and equal to $4637\frac{75}{131}$ Ass victuali-vigt, 222.634 Grammes, or 3436.1 Grains Troy.

The Swedish Silver weight is the Lödig Mark of 8 Uns (oz.), 16 Lod, 64 Quintin, or 4384 Ass. It is equal to 210.459 Grammes, or 3248.2 Grains Troy.

100 Lödig Marks S. W.	=	676.714	Oz. Troy.
100 Oz. Troy	=	14.7773	Lodig Marks S. W.

The Commercial Weight is called Victuali-vigt, or provision weight. The Skälpund, Mark, or Pound of this weight contains 16 Oz. 32 Lod, or 8848 Ass; and is equal to 424.759 Grammes, or 6555.7 Grains Troy.

100 lb. Victuali-vigt	=	93.653 lb.	Avoirdupois.
100 lb. Avoirdupois	=	106.777 lb.	Victuali-vigt.
112 lb. —	=	119.590 lb	—

Other weights used in Sweden are—

Jern - Stapelstads or Utskeppnings - vigt, called in English Iron Weight, used for the export weight of metals in those towns that have the privilege of trading with foreign parts. The Mark or Pound of this weight is only 4-5ths of that of the preceding weight, and is equal to $7078\frac{2}{5}$ Ass, 339·807 Grammes, or 0.7492 lb. Avoirdupois.

Bergs-vigt (Miners Weight), used at the forges and manufactories of iron, is $10\frac{1}{2}$ per cent heavier than the Iron Weight. The Mark of this weight is equal to $7821\frac{79}{131}$ Ass, 375.486 Grammes, or 0.82789 lb. Avoirdupois.

Uppstad-vigt (Inland Town Weight), used for metal received in inland Towns that have not the privilege of foreign trade. The Mark of this weight is $5\frac{1}{4}$ per cent. heavier than the Mark Iron Weight, and is equal to $7450\frac{9}{131}$ Ass, 357.646 Grammes, or 0.75856 lb. Avoirdupois.

The Mark Tackjern-vigt (Cast or Pig Iron Weight) is 10168 Ass, 488.127 Grammes, or 1.07625 lb. Avoirdupois.

The Mark for the weighing of Copper Ore is 7853 Ass, 376.993 Grammes, or 0.831215 lb. Avoirdupois.

A Skeppund v : v : is 20 Lispund, or 400 Markar; but in Tacksjern Weight it is 26 Lispund, or 520 Markar.

A Centner is 5 Lispund, or 100 Skälpund.

N.B. The preceding estimates are derived from the comparison made at the Royal Mint in Stockholm between the Swedish and the French weight, by which the Kilogramme was found to be equal to 2.354275 Swedish Mark of 8848 Ass, rendering the Swedish Mark v : v : equal to 424.759 Grammes, or 6555.7 Grains Troy.

Of the two models of this weight tried at the Mint of London, the one from Stockholm is stated to have weighed 6560 Grains Troy, and the other from Gottenburg 6555.5 Grains Troy, the latter agreeing to all requisite exactness with the Swedish estimation.

Liquid Measures. The Kannor of 2 Stop, 8 Quarter, or 32 Jumfrur, is the common integer of measures of capacity. The contents of the Kannor are 172.8 Swedish Cubic Inches, or the tenth part of the Swedish Cubic foot, equal to 2.61718 Litres, or 0.576043 Imperial Gallon, making

100 Kannor	=	57.6043 Imperial Gallons.
100 Imperial Gallons	=	173.598 Kannor.

The Ankare is 15 Kannor, the Fat or Am is 60 Kannor, and the Oxhufond is 90 Kannor.

The Tunna of Pitch or Tar is 95 Stop, equal to 27.362 Imperial Gallons. The Tunna, Liquid Measure, of other articles is 96 Stops, or 48 Kannor.

Dry Measures.—The Common Tunna or Barrel, Dry Measure, contains 2 Spann, 4 Fjerdingar, 32 Kappar, or 56 Kannor; but for some articles a greater number of Kappar is used, as 34 Kappar for the Tunna of Salt and Lime, 36 Kappar for the Tunna of Wheat and other Grain, and 38 Kappar for the Tunna of Malt. Hence—

	Imp. Bush.	Imp. Qrs.	Hectolitres.
100 Common Tunnar =	403.231 =	50.403 =	146.562
100 Salt — =	428.432 =	53.554 =	155.722
100 Wheat — =	453.633 =	56.704 =	164.882
100 Malt — =	478.835 =	59.854 =	174.043

	Com. T	Salt T.	Wheat T	Malt T
100 Imp. Qrs. =	198.398 =	186.727 =	176.354 =	167.072

Measures of Length, &c.—The Swedish Foot (Fot) of 12 Common or 10 Decimal Inches (Tum) is equal to 0.296901 metre, or 11.6893 English Inches.

The Swedish Ell (Aln) is 2 Feet. The Famn, or Fathom, is 3 Ells, or 6 Feet. A Stång is 5 Ells, or 10 Feet. A Swedish Mile (Mil) is 6000 Famnar, or 18000 Alnar, and is equal to 11689.3 English Yards, or 6.64164 English Miles.

100	Swedish Feet	=	97.4107	English	Feet.
100	— Ells	=	64.9404	—	Yards.
100	English Feet	=	102.658	Swedish	Feet.
100	— Yards	=	153.987	—	Ells.
100	— Miles	=	15.056	—	Miles.

Land is measured, in surface, by the Tunnland or by the Kappland. The Tunnland is divided into 4 Halfspannland, each of 8 Kappland, or 14 Kannland.

The Tunnland is 14000 Swedish Square Ells, and is equal to 5904.17 English Square Yards, or 1.21988 English Acres, and the Kappland of 437½ Swedish Square Ells is equal to 184.505 English Square Yards, or very nearly 6.1 English Poles.

N.B. As there are some differences between the general estimates and those which have been carefully revised and are here given of the measures of length and surface, as well as of those of capacity, it is proper to state that the latter have been based upon the investigations made by the Swedish and the English Royal Societies; the one body making it equal to 33.681256 Swedish Decimal Inches, and the other to very nearly 39.371 English Inches.

EXCHANGES.

Stockholm and Gottenburg, or Götheborg, give in Banco,
at Par, to

London	R. dr	17	50	sk.	for	1	£ Sterling.
Amsterdam		150	—	—		100	Florins.
Hamburg		132.50	—	—		100	Marks Bo.
Copenhagen		202	—	—		100	Rigsbank Daler.
Paris		70	—	—		100	Francs.
St. Petersburg		263	—	—		100	Silver Roubles.

Bills on London are usually drawn at 75 or 90 days' date; on Hamburg at 67 or 90 days' date; on Amsterdam at 70 or 90

days' date ; on Paris at 60 or 90 days' date ; on Copenhagen at 8 days' date, and on Petersburg at 30 days' date.

The shorter of the two periods is generally used in Stockholm, and the other in Gottenburg.

The Usance for Bills on Sweden is 30 days' sight.

The days of grace are 6.

New System of Swedish Money, Weights, and Measures, partially in use since 1 Jan. 1856, *and to become compulsory from the beginning of* 1863

MONEY.

1 Riksdollar Riksmynt, divided in 100 Ore, equal to 1 Riksdollar Riksgåld, or ⅔ Riksdollar Banco of the old system = 13.28 d.

LONG MEASURES.

1 Ref	=	10	Stanger.
1 Stang	=	10	Feet (Fot).
1 Foot	=	10	Inches (Tum).
1 Inch	=	10	Linier.

LAND MEASURES.

1 Square Ref	=	100	Square	Stanger.
1 — Stang	=	100	—	Feet.
1 — Foot	=	100	—	Inches.
1 — Inches	=	100	—	Linier.

CUBIC MEASURES.

1 Cubic Foot	=	1000	Cubic Inches, or 10 Kannor.
1 Kanna	=	100	—	—
1 Cubic Inch	=	1000	—	Linier.

WEIGHTS.

1 New Last	=	100	Centner.
1 Centner	=	100	lb. (Skalpund).
1 Skälpund	=	100	Ort.
1 Ort	=	100	Korn.

1 English Ton is equal to 23 Centner 91.8 lb., but for all practical purposes it is assumed to be exactly 24 Centner.

The integers of the new system are the same as those of the old ; the Skälpund, Victuali-vigt serving as the basis.

The new currency and weights are now generally adopted, at least in the commercial towns, but grain is still commonly sold by the old Tunna of 36 Kappar.

RUSSIA.

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MONEYS.

100 Copek   =   1 Ruble or Rouble.

By the Imperial Ukase of the 1st July, 1839, the Silver Standard was re-established as the lawful Money of Account and Exchange throughout the Russian Empire; but the existing Paper Currency, called Banco or Imperial Bank Assignments, was allowed to remain in circulation as an auxiliary medium of payment; the rate of the Rouble in Banco being fixed at 100 Copeks in Copper, and at 2-7ths of the Silver Rouble, making 100 Roubles in Silver equal to 350 Roubles in Banco.

In the Southern and Eastern Provinces of the Empire, however, the Rates of Exchange and Valuations of Merchandise still continue to be made in Banco, the amounts being converted into legal Silver Money at, as above stated, 2-7ths of the same in Banco.

The value of the Silver Rouble being 37.5314 Pence, usually reckoned at 37½ Pence Sterling, the equivalent rate of the Rouble in Banco is 10.7232 pence, reckoned 10¾ Pence Sterling.

WEIGHTS AND MEASURES.

Weights.—The Russian Pound consists of 96 Zolotniks each of 96 Dolis. The Pūd or Pood is 40 lb. The Berkowitz is 10 Poods, or 400 lb. From the average of several careful trials made at the Bank of England,* the weight of the Russian Pound is equal to 6319.96416 Grains Troy. From which estimate

		lb.	oz.	dwt.	grs		lb.
1 Pood	=	43	10	13	6.5664	Troy =	36.11408 Avoir.
1 Pound	=	1	1	3	7.96416	=	0.902852 —
1 Zolotnik	=			2	17.83296	=	0.009404 —
1 Dolis	=				0.68576		

* By W D Haggard, Esq , F.S A., Principal of the Bullion Office.

100 Pounds = 1316.6592 oz., or 109.7216 lb. Troy = 90.2852 lb. Avoirdupois, or 40.9482 Kilogrammes.

100 Poods   = 4388.864 lb. Troy = 32.24471 Cwt. Engl.

1000 Zolotniks = 137.152 oz. Troy.

And

100 lb. Troy   =   91.13974 lb. Russ. = 100 oz. Troy =

729.118 Zolot.

100 lb. Avoir. = 110.7601   =   2.76900 Poods.

112 lb   — = 124.0513   =   3.10128   —

2240 lb. Avoirdupois, or 1 Ton Eng.   = 62 02564   —

The standard of the Russian Pound, transmitted by the British Consul to this country, is stated to have weighed 6318½ Grains Troy; but it was unquestionably under the proper weight; and in bullion estimations it is more correctly taken at 6319¾, or 6320 Grains Troy.

In some portions of the Russian Territories, as in Courland and Livonia, and particularly in Riga, the old local Weights and Measures were permitted to be used; but they have been entirely abolished since the 1st January, 1846.

Liquid Measures.—The Vedro contains 8 Chetvericks, each of 8 Krushkas. The Anker is 3 Vedros. The Oxhoft is 6 Ankers. The Botchka or Cask is 40 Vedros.

The cubical contents of the Vedro are 750 Cubic Inches, equal to 2.7049 Imperial Gallons, or 12.2894 Litres.

100 Imperial Gallons = 36 97 Vedros.

General estimations make 100 Vedros equal to 271 Imperial Gallons, and 100 Imperial Gallons equal to 369 Vedros.

Dry Measures. — The Tschetwert, or Chetwert, contains 8 Tschetwericks; its cubic contents are 12800 Cubic Inches.

100 Chetwerts   = 72.1308 Imperial Quarters.

100 Imp. Quarters = 138.637 Chetweits.

In common estimations, 1 Chetwert is reckoned equal to 5¾ Imperial Bushels, and 100 Chetwerts to 72 Imperial Quarters, at which rate wheat is generally sold for delivery on arrival in this country.

At the Exchange of Banco Rouble 22.40 per £ Sterling, or 37½ d. per Silver Rouble. 1 Banco Rouble per Chertwert is equivalent to 15 Pence per Imperial Quarter, or 1 Silver Rouble per Chertwert to 4 s. 4 d. per Imperial Quarter.

Long Measures.—The English Foot is commonly used in St. Petersburg for the measurement of Timber, Deals, &c.

The St. Petersburg Standard of Deals contains 120 pieces, each 12 Feet long, 1½ Inch thick, and 11 Inches wide, equal to 165 English Cubic Feet.

The old or proper Russian Foot is equal to 14 English Inches, making the Arschine of 16 Werschock, or 2 Russian Feet, equal to 28 English Inches, and 9 Arschine equal to 7 English Yards.

The Fathom, Sachine or Sajene, is 3 Arschines, or 6 Russian Feet, or 7 English Feet, or 2.1336 metres.

The Werst, or Russian Mile, is 500 Sajenes, equal to 3,500 English Feet, or 5 Furlongs 66⅔ Yards, or 1.06678 Kilometres, making 100 Wersts equal to 66.2878 English Miles, or 3 Wersts to nearly 2 English Miles.

Land is measured by the Desatine of 2400 Square Sajenes, equal to nearly 2 Acres 2 Roods 32 Poles English, or 1.0925 Hectares.

N.B.—The Standard of the Russian Foot, transmitted by the British Consul, is stated to have measured 13¾ Inches. The Russian estimates are as above.

In cases in which the Rhinland Foot is employed, it is calcu lated to be 3 per cent. longer than the English Foot.

EXCHANGES.

St. Peterburg receives, at Par, for 1 Silver Rouble, from

London	37½	Pence
Amsterdam	187	N. Cents.
Hamburg	34⅙	Schillings Banco.
Paris	396	Centimes.

Bills on London are usually drawn at 3 months, on Amster- dam at 75 days, on Hamburg at 65 days, and on Paris at 70 days' date.

The old style being used in Russia, it is usual to add the cor- responding day according to the new style in Bills of Exchange drawn upon other countries, as April, 3/15.

The tenor of Bills upon Russia must be specified, as the term Usance is not a legal description of time.

Bills at short sight are allowed 3 days, and other Bills 10 days of grace, if such grace should be demanded by the acceptor.

In Exchanges with London ⅜ d. are reckoned equal to 1 per cent., making the mercantile or banking Par for Bills at 3 months equal to 37⅞ d. Sterling.

Odessa, at Par, gives to

London Bo. Roubles 22.40 c. per £ Sterling.

EXAMPLE.

To exchange £ 816 14 4 into Silver Roubles, at 37₁₆¹⅝ d.

d.		S. R.		£	s.	d.
If 37₁₆¹⅝	——	1	——	816	14	4?

605 Sixteenths.   3136192 Sixteenths.

S. Roubles.

605) 3136192

S. Roubles   5183.79 c.

REVERSE.

To exchange S. R. 5183.79 into Sterling at 37₁₆¹⅝.

d.		£.	
5183.79	(or)	518.379	for 2 s.
37		259.1895	— 1 —
		21.5991	— 1 d.
19180023		10.7995	— 8-16ths
259189 for 8-16ths.		5.3997	— 4 —
129594 — 4 —		1.3499	— 1 —
32398 — 1 —			

£ 816.716

d 196012

£ 816 14 4

s 16334   4

£ 816 14 4

EXERCISES.

Ex. 1. £ 1000 Sterling into Silver Roubles at 37¼d.
  2. £ 644 10 5 Sterling into Silver Roubles at 38⅛d.
  3. S. Roubles 8000.00 into Sterling at 37½d.
  4. S. Roubles 4876.56 into Sterling at ·

PRODUCTS.

Ex. 1. S. R. 6442.95   Ex. 3. £ 1250   0   0
  2. S. R. 4044.05   4. £ 770 17   0

POLAND.

$$30 \; Groschen \quad = \quad 1 \; Zlot, \; or \; Florin.$$

The value of the Polish Florin is very nearly 5⅝d. Sterling, 20 Polish Florins being valued at 3 Russian Silver Roubles, and also 6 Polish Florins at 1 Prussian Thaler.

According to the Imperial Ukase of the 2nd February, 1841, all public accounts, and all agreements, requiring legal sanction between private persons, are to be kept or made out in Russian Silver Roubles, reckoning each at 6⅝ Polish Florins ; and, by a recent order, no Polish coins are to be received in payment for duties, imports, &c., in any of the public departments.

WEIGHTS AND MEASURES.

The following statements are to be considered as being limited to that portion of the ancient kingdom of Poland which was latterly known as forming the Grand Duchy of Warsaw, as the weights and measures, as well as the monies, of Russia, Austria, and Prussia, have been introduced and established in their respective incorporated provinces.

Weights.—The Polish Funt, or Pound, is composed of 16 Ounces, 128 Drams, or 9216 Grains, each equal to 44 Milligrammes, making the Pound equal to 405.504 Grammes, or 6258½ Grains Troy.

The Polish Centner of 4 Hamini, or 100 lb., is therefore equal to 40.5504 Kilogrammes, or 894.08 lb Avoirdupois.

Liquid Measures.—The Polish Kwarta is equal to the French Litre ; and the Beczka of 25 Garniec, or 100 Kwarty, are equal to 100 Litres, or 22.01 Imperial Gallons.

Dry Measures.—The Korzec, containing 4 Ciwierci, 32 Garcy,

or 128 Kwarty, is equal to 1.28 Hectolitre, or 3.5216 Imperial Bushels, making 100 Korzec equal to 44.02 Imperial Quarters.

Long Measures.—The Polish Ell or Lokiec, of 2 Stop or Feet, 24 Calow or Inches, each equal to 24 Millimetres, is equal to 0.576 Metre, or 22.6777 English Inches, making 100 Polish Ells equal to 62.9936 English Yards.

The Polish Mile is reckoned equal to 8 Russian Wersts, or about 5¼ English Miles.

COURSE OF EXCHANGE.

Warsaw, at Par, gives to

London	6.52½	Sil. R. and Cop. for	1 £ Sterling.
Amsterdam	126.15	—	— 250 N. Gulden.
Berlin	98.40	—	— 100 Thalers.
Hamburg	147.45	—	— 300 Marks Bco.
Paris	79.	—	— 300 Francs.
St. Petersburg	97.50	—	— 100 Silv. Roubles.
Vienna	75.60	—	— 150 Aust. Flor.

SPAIN.

| 34 Maravedis | = | 1 Real. |
| 20 Reales | = | 1 Duro or Hard Dollar. |

The legal money of account in Spain is in Reales, called *Reales de Vellon*,* it is now becoming the practice to divide the Real into 10 Decimas, or 100 Centenas.

In Spanish exchanges with England, the Penny Sterling is also now divided into 100 Cents, and 100 Reales are reckoned equal to £1 Sterling, making the value of the Duro, or Dollar of Exchange, 48 Pence Sterling;† at its full mintage rate it is worth 50½ d., but in our colonial estimations it is rated at 50 d.

The French 5-Franc Piece, which is intrinsically worth about 18½ Reales de Vellon, has been admitted as part of the currency at 19 Reales, and in general calculations it is valued at 1 Hard Dollar.

The principal Gold Coin is the Doblon, or *Onze de Oro*, the value given to it in our colonial estimations is 64 s. Sterling, but at its full mintage value it is worth 64 s. 8 d. The other Gold Coins are the Media Onze, or Half Ounce; the Doblon de Ochenta, 80 Reales; the Doblon de Cuarenta, or Escudo, 40 Reales; and the Coronilla, Escudito, or Doblon de Vienti, 20 Reales, also called the Durillo and Gold Dollar.

WEIGHTS AND MEASURES.

The Castillian Weights and Measures are the standard ones, and are used in Cadiz, Seville, Carthagena, Malaga, and Santan-

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* The English for *Vellon* is fleece. Why applied to the monetary denominations has not been explained.

† The Hard Dollar, sometimes called the Spanish Piastre, was formerly called a *piece of eight*, possibly because in Mexico, where it was generally coined, it is equal to 8 Reales of that country; and throughout the Mediterranean the Hard Dollar is the coin called *Colonato*, or Pillar Dollar, from two pillars (to designate the pillars of Hercules) stamped on them, which distinguish those formerly coined in Mexico.

dar, and in all contracts would be understood to be referred to, unless special mention was made to the contrary. Some of the provinces still use their own Weights and Measures, and contracts made in them are binding.

The Metrical System is now in general use.

The Libra Castilliana is divided into 16 Onzas, and contains 460.042 Grammes. 25 lb. Castilliana make 1 Arroba, and 4 Arrobas 1 Quintal.

100 Castillian lb.	=	101.44 lb. Avoirdupois.
100 lb. Avoirdupois	=	98.57 Castillian lb.
112 —	=	110.40 —

100 Castillian lb. equal 88.89 Alicant lb., Mayores, or 133.33 Menores, 131.55 lb. of Aragon, 115.01 lb. of Barcelona, or 93.93 lb. of Bilbao.

Liquid Measures.—The Cantara, or Arroba Mayor, is divided into 8 Azumbres, each of 4 Cuartillas, and contains 16.168 Litres, or 3.559 Imperial Gallons. The Mayo is 16, the Pipe 27, and the Butta 30 Cantaras.

100 Cantaras	=	355.90 Imperial Gallons.
100 Imperial Gallons	=	28.09 Cantaras.

The Arroba Menor contains 12.627 Litres, or 2.779 Imperial Gallons.

The Pipe of Oil contains 34½ Arrobas Menores.

100 Arrobas Majores	=	128 Arrobas Menores.

Corn Measures.—The Castillian Fanega is divided into 4 Cuartillas, or 12 Celemines or Almudes. A Cahiz is 12 Fanegas or 56.487 Litres; and if of Wheat, of the best quality, it is reckoned to weigh 1152 Castillian pounds, or 1168 lb. Avoirdupois, which renders rather more than 62½ lb. Avoirdupois to the Imperial Bushel.

100 Castillian Fanegas	=	19.43 Imperial Quarters.
100 Imperial Bushels	=	64.34 Castillian Fanegas.

100 Castillian Fanegas equal to 250.38 Fanegas of Aragon, 75 of Asturia, 93.98 of Bilbao, or 102.59 of Santandar.

Long Measures.—The Vara is 4 Palmas, or 3 Pies de Burgos, each of 12 Pulgadas. The Spanish foot is equal to 282.646 Millimetres, or 11.128 English Inches, and is the same throughout Spain.

100 Spanish Varas	=	92.73 English Yards.
100 English Yards	=	107.84 Spanish Varas.

100 Castilhan Varas, equal to 111.47 Alicant Varas, 110.48 Varas of Aragon, or 107.24 Varas of Barcelona.

The Spanish Mile contains 6783.5 Metres, or 4.22 English Miles.

COURSE OF EXCHANGE.

Madrid receives from

| London | 48.85 Pence for | 1 Duro. |
| Paris | 4.93 Francs and Cents for 1 | — |

The Usance of Bills from England is, at Cadiz, 2 months' date; at Madrid, 60 days' date.

EXAMPLES.

To exchange 18.000 Reales into Sterling, at 48 d.

	R.		d.		R.
If	20	——	48	——	18.000 ?

20) 864000

d. 43200

£ 180   0   0

To exchange £800 Sterling into Reales, at 48.50.

	d.		Reales.		£.
If	48.50	——	20	——	800 ?

192000   192000

48.5) 3840000

Reales   7917 15 m.

GIBRALTAR.

16 Quartos	=	1 Real.
12 Reals	=	1 Dollar.

The Dollar of account and exchange is the Peso Duro, or Spanish Hard Dollar, which by Order in Council, 14 September, 1838, is made a lawful tender in all the British Colonies in which it is used, at the rate of 50 d. Sterling.

The Spanish Doubloon, is, by the same order, valued at 64 Shillings Sterling; but in Gibraltar, as throughout Spain, it is valued at 16 Dollars, and it here forms the principal money of payment.

WEIGHTS AND MEASURES.

The weights and measures are those of Great Britain.

COURSE OF EXCHANGE.

Gibraltar receives from

London	49¾ Pence	for	1 Dollar.
Genoa	Lire 5.34 Cent.	—	1 Dollar.
Marseilles	Frs. 5.35 Cent.	—	1 Dollar.

In the exchange business between Gibraltar and Cadiz, Malaga, Madrid, or Seville, the difference of price is a per Centage Premium or Discount.

EXAMPLE.

To exchange H. D. 4400 10 r 8 q into Sterling at 49 d.

£	s.	d.		
4400	17	6	amount at	20 s.
880	3	6	——	4 s.
18	6	9	——	1 d.
£ 898	10	3	Sterling.	

PORTUGAL.

1000 Reis	=	1 Milreis.

A new Gold and Silver coinage was ordered by a decree of the 29th July, 1854, according to which the value of the Gold Crown of 5000 Reis is £1 3 11¼ Sterling, and of the Silver Crown, or Milreis, 56¼ d. Sterling.

The Gold Coins are pieces of 10,000, 5000, 2000, and 1000 Reis. The Silver Coins are pieces of 500, 200, 100, and 50 Reis. The Copper Coins consist of 40, 20, 10, and 5 Reis pieces.

The Crusado of Exchange is 400 Reis; a Conto of Reis is 1000 Milreis.

WEIGHTS AND MEASURES

The Weights are still the same as those formerly used, but for Measures the Metrical System is generally, though not exclusively, adopted.

Weights.—The Arratel or Pound is 16 Ounces, and is equal to 458.976 Grammes. 32 Arrateis make 1 Arroba, and 4 Arroba 1 Quintal.

1 Arroba	=	32.38 lb. Avoirdupois.
1 Quintal	=	129.52 Do.
100 Arrateis	=	101.18 Do.
100 lb. Avoirdupois	=	98.83 Arrateis.
112 Do.	=	110.69 Do.

The Ton English is equal to 17¼ Portuguese Quintals.

Liquid Measures.—The Almude or Cantaro is 2 Potes or Alquieres, or 12 Canadas, or 48 Quartillos, and is equal to 16.54.

100 Almudes of Lisbon	=	364.05 Imp. Gallons.
100 Imp. Gallons	=	27.47 Almudes.

The Almude of Oporto is equal to 5.476 Imperial Gallons, and it requires about 21 Almudes to form the Standard Pipe of 115 Imperial Gallons. The Pipe of Lisbon Wine of the

Standard Contents of 117 Imperial Gallons takes about 32 Almudes.

A Pipe of Oil contains 30 Almudes.

Corn Measures.—The Fanega or Fanga is 4 Alqueires, each of 32 Selamins, and is equal to 54.032 Litres.

100 Alqueires of Lisbon	=	37.19	Imp. Bushels.
100 Imp. Bushels	=	268.85	Alqueires.
100 Alqueires of Lisbon	=	81	Alq. of Oporto.

Long Measures.—The Covado Craveiro, or Cubit, contains 3 Palmos, each of 8 Pollegadas. The Vara or Ell is 5 Palmos, is equal to 1.096 Metres. The Portuguese Foot is equal to 0.3288 Metre, or 1.078 English Foot.

100 Covados Crav.	=	71.92 English Yards.
100 Varas	=	119.86 —
100 Eng. Yards	=	139.05 Covad. Crav. or 83.43 Varas.

The Covado generally used in Commerce contains 24¼ Pollegadas, and is called the Covado Avantejado, and is equal to 678.1 Millimetres.

32 Covados Avant.	=	33 Covados Crav.
100 —	=	74 17 English Yards.
100 English Yards	=	134.84 Covados Avant.

The Portuguese Mile is 1 Mile 493 Yards English. The League contains 3 Miles of 8 Estudios each, or 18 Leagues to an Equatorial Degree, and is equal to 6.173 Kilometres or 6763 English Yards.

COURSE OF EXCHANGE.

Lisbon and Oporto *give to* or receive from

London	54	Pence	for	1 Milreis.
Amsterdam	43½	Grotes	—	1 Crusado.
Genoa	526	Reis	—	3 Lire Nuove.
Hamburg	48¼	Sch. Banco	—	1 Milreis.
Leghorn	526	Reis	—	3 Lire.
Madrid	930	Reis	—	1 Duro.
Naples	734	Reis	—	1 Ducat.
Paris	525	Reis	—	3 Francs.
Vienna	452	Reis	—	1 Florin.

EXAMPLE.

To exchange £ 647 11 1 into Reis at 57½ d.

	d		Reis.		£	s	d
If	57½	——	1000	——	647	11	1?
	115				310826	d	

Reis.
115) 310.826.000

Reis   2:702.835

Contos of Reis are usually separated from Milreis by a double point, and Mils from Reis by either a single point or a crossed cypher.

REVERSE.

To exchange Reis 2:702.835 into Sterling at 57½ d.

£
¼ - - 2702.835

675.709   for   60 d
28.154   —

£ 647.555   =   £   647 11 1

This is the shortest method, but it is more common to consider the Milreis as Pence, and multiply by the rate.

EXERCISES.

Exchange

Ex. 1.   £ 1000 into Reis at 57 d.
2.   £ 245 6 3 into Reis at 56½ d.
3.   Reis 10:000.000 into Sterling at 57½ d.
4.   Reis 13:572.866 into Sterling at 58 d.

PRODUCTS.

Ex. 1. Reis 4:210.526	Ex. 3. £ 2395 16 8
2. Reis 1:042.035	4. £ 3280 2 2

LOMBARDO.

MILAN.

100 Centisimi   =   1 Lira.

The Lira is of the same value as the Genoese Lira.

The former monies of account were in Lire Corrente of 20 Soldi each of 12 Denari, and Lire Italiane of 100 Centisimi.

145 Lire Corrente	=	128 Lire Austriache.
100 Lire Austriache	=	87 Lire Italiane.

WEIGHTS AND MEASURES.

100 Libbre	=	220.46 lb. Avoirdupois.
100 Pinte	=	22.01 Imperial Gallons.
100 Some	=	34.39 Imperial Quarters.
100 Metri	=	109.36 Yards.

The above are upon the French metrical Standards. The Libbra Metrica is the official weight for the whole of the kingdom of Lombardo.

COURSE OF EXCHANGE.

Milan, in Lire Austriache and Centisimi, gives to

London	Lire 24.60 Centisimi	for	1	£ Sterling.
Amsterdam	— 2.10	—	1	Florin.
Augsburg	— 2.52	—	1	Florin.
Frankfort	— 2.10	—	1	Florin.
Genoa	— 0.99¾	—	1	Lira Nuova.
Hamburg	— 1.80	—	1	Mark.
Leghorn	— 0.98¼	—	1	Lira.
Naples	— 4.40	—	1	Ducat.
Paris	— 0.99½	—	1	Franc.

VENICE.

~~~~~

| 100 Centisimi | = | 1 Lira Austriaca. |

The Lira is also divided into 20 Soldi Austriachi.

The Lira is the same value as the 20-Kreuzer Piece, or 1-3rd of an Austrian Florin. The Piece of 3 Lire is of the same value as a Florin, and the Piece of 6 Lire as a Species-dollar.

The value of the Lire in Sterling is $8\frac{18}{100}$ d. Sterling, from which the Par of Exchange is Lire 29.52 Cent. per £ Sterling, or 48¾ d. Sterling for 6 Lire.

WEIGHTS AND MEASURES.

Weights.—The commercial weights are of two kinds — the Peso Grosso and Peso Sottile. The Libra, or Pound, of either weight contains 12 Oncie.

lb.		lb.			
100 Peso Grosso	=	105.17	Avoird., or	47.7	Kilogrammes.
100 — Sottile	=	66.42	— —	30.123	—
100 Avoirdupois	=	95.08	PezoGr. —	150.56	Peso Sottile.
112 —	=	106.48	— —	168.62	—

Liquid Measures.—The Barile for Wine contains 24 Bozze, and contains nearly 13½ Imperial Gallons, or 64.75 Litres. Oil is sold by the Migliajo of 1000 Libbre or of 40 Mire, each of 25 Lib. Peso Grosso, which, at 9 lb. per Gallon, renders about 117 Imperial Gallons, or 86 Mire, for a Tun of 252 Gallons.

Dry Measures.—The Stajo contains 4 Quarti, each of 4 Quartaroli, or 83.317 Litres.

| 100 Staji | = | 29.18 Imperial Quarters. |
| 100 Imperial Quarters | = | 342.70 Staji. |

Long Measures.—The Braccio is divided into 12 Oncie.

100 Braccia Piccole	=	69.82	English Yds., or	63.84	Metres.
100 — Grosse	=	74.47	— —	68.098	—
100 English Yards	=	143.23	Braccia Picc. —	134.28	Br. Gr.

The Braccio Piccolo is used for Silk Measure, and the Braccio Grosso for Woollen Measure.

EXAMPLE.

To exchange £ 464 10 Sterling into Lire Austriache at 30 Li. 15 Cent. per £ Sterling, and at 47¾ d Sterling for 6 Lire Austriache.

$$
\begin{array}{ccccc}
£ & & \text{L. C.} & & £ \quad s \quad d. \\
\text{If} \quad 1 & \text{———} & 30 \;\; 15 & \text{———} & 464 \;\; 10 \;\; 0 \; ? \\
& & 464 & & \\
\end{array}
$$

$$
\begin{array}{c}
13989.60 \\
15.07 \\
\end{array}
$$

Lire Aust. 14004.67 Cent.   1 st Product.

$$
\begin{array}{ccccc}
d & & \text{Lire} & & £ \quad s \quad d \\
\text{If} \quad 47\tfrac{3}{4} & \text{———} & 6 & \text{———} & 464 \;\; 10 \;\; 0 \; ? \\
\end{array}
$$

191 Farth.   445920 Farthings.

$$
\begin{array}{c}
\text{Lire} \\
445920 \\
6 \\
\end{array}
$$

191) 2675520

Lire Aust.   14007 95 Cent.   2 nd Product.

The rate of exchange of London on Venice is according to the latter of the above forms.   That of Venice on London was formerly the same, but it was lately changed.

EXERCISES.

Ex. 1.   £ 500 Sterling into Lire Aust. at 30 Lire.
　　2.   £ 500 Sterling into Lire Aust. at 48 d.
　　3.   £ 129 16 5 into Lire Aust. at 47¼ d.
　　4.   Lire Aust. 8000 into Sterling at L. 30.30
　　5.   Lire Aust. 6424 60 into Sterling at 48¼ d.
　　6.   Lire Aust. 4578 92 into Sterling at 47¾ d.

PRODUCTS.

Ex. 1.	L. A. 15000.00	Ex. 4.	£ 264 0 6
2.	L. A. 15000.00	5.	£ 215 5 4
3.	L. A. 3956.44	6.	£ 151 16 9

TUSCANY.

FLORENCE AND LEGHORN.

100 Centisimi = 1 Lira.

The value of the Lira Toscana is $7\frac{9.9}{10.0}$ d. Sterling, making the Par of Exchange with London 30.69 Lire for £ 1 Sterling.

The Lira was also divided into 20 Soldi di Lira, each of 5 Centisimi, or 12 Dinari.

The principal Gold Coin is the Ruspone, which bears the nominal value of 40 Lire. Its full mintage rate is 28 s. 7 d. Sterling, but its current value is variable.

The Franciscone of $6\frac{2}{3}$ Lire is the principal Silver Coin, 3 of which being equal to 20 Lire. The Testone is 2 Lire, the Paolo 2-3rds of a Lira, and the Crazia 1-12th. Various foreign Coins are used at fluctuating prices.

WEIGHTS AND MEASURES.

Weights.—The Libbra is divided into 12 Oncie, each of 4 Drachms, and contains 339.542 Grammes.

100 lb Toscane	=	74.86 lb. Avoirdupois.
100 lb. Avoirdupois	=	133.59 lb. Toscane.
112 —	=	149.62 —

A Centinajo is 100 lb. ; A Migliago is 1000 lb. Tuscan.

Liquid Measures.—The Barile contains 20 Fiaschi or 40 Boccali, and is equal to 10.03 Imperial Gallons, or 45.58404 Litres.

100 Fiaschi	=	50.16 Imperial Gallons.
100 Imperial Gallons	=	9.97 Barili.

Wine is sold by weight as well as by measure. The Barile is 133½ Tuscan lb., 3 Barili being 400 lb., or very nearly 100 lb. Avoirdupois. Oil is also sold by weight. The Barile of Oil is

88 Libbre Toscane, or 65.87 lb. Avoirdupois, which give 7.32 Imperial Gallons to the Barile, or about 34½ Barili to the Tun of 252 Imperial Gallons.

Long Measures.—The Canna of commerce consists of 4 Braccia, each of 20 Soldi.

100 Braccia   =   63.82 English Yards, or 58.36 Metres.
100 English Yards = 156.67 Braccia.

COURSE OF EXCHANGE.

Leghorn gives to

London	Lire 24.94 Cent.	for	1 £ Sterling.
Amsterdam	2.05	—	1 Florin.
Constantinople	.25	—	1 Piastre.
Genoa	.99¾	—	1 Lira Nuova.
Hamburg	1.88	—	1 Mark.
Lisbon	5.60	—	1 Milreis.
Madrid	4.95	—	1 Duro.
Milan	.99½	—	1 Lira.
Malta	2.42	—	1 Scudo of 12 Tari.
Messina	15.34	—	1 Onza.
Naples	4.20	—	1 Ducat del Regno.
Paris	.99¾	—	1 Franc.
Rome	5.30	—	1 Scudo.
Vienna	1.87	—	1 Florin.

The Usance of Bills from England is 3 months' date.

The present Lira is of precisely the same value as that of Genoa.

The Gold Coins are pieces of 20, 10, and 5 Lire; the Silver Coins consist of 5, 2, 1, and ½ Lire pieces.

Example. 1.

To exchange £ 800 into Sterling at 30.25

$$
\begin{array}{c}
\text{L \quad c} \\
30.25 \\
800 \\
\hline
\end{array}
$$

L.T. 24200.00

Example 2.

To exchange L. T. 24274 80 into Sterling at 29.83.

L c	£	L
If 29.83	1	24274 80 ?

$$
\begin{array}{l}
\text{£ \qquad £ \quad s. \quad d.} \\
2983) 2427480 (813 \ 15 \ 5 \quad \text{Sterling.} \\
\quad 4108 \\
\quad 11250 \\
\quad) 23010 (771 \\
\quad 2129 \\
\quad 43
\end{array}
$$

Exercises.

Exchange.

Ex. 1. £ 600 Sterling into Lire T. at 30.20
  2. £ 371 11 1 Sterling into Lire T. at 30.55
  3. Lire T. 4159.28 into Sterling at 29.85
  4. Lire T 8210.15 into Sterling at 29.72½

Products.

Ex. 1.	L. T. 18120.00	Ex. 3.	£ 139	6	9
2.	L. T. 11350.98	4.	£ 276	4	1

GENOA.

100 Centisimi   1 Lira Nuova.

The Lira Nuova is of the same value as the French Franc, or the Lira Italiana, viz. 9½ d. Sterling. The late money of Genoa was in Lire, Soldi, and Denari, called *Fuori Banco.* 5 Lire Nuove are reckoned equal to 6 Lire Fuori Banco.

The Exchanges were usually made in Pezze of 5¾ Lire F. B., and in Price Currents, &c., this money is still employed. The Pezza is divided into 20 Soldi, each of 12 Denari, called Soldi and Denari *di Pezza.*

WEIGHTS AND MEASURES.

100 lb. of Genoa	=	69.88 lb. Avoirdupois.
100 Rottoli of 1½ lb.	=	104.83 lb. Avoirdupois.
The Barile of Wine	=	16 34 Imperial Gallons.
The Mina of Corn	=	3.31 Imperial Bushels.
The Braccio of 2¼ Palmi	=	22.96 English Inches.

COURSE OF EXCHANGE.

Genoa gives to

London	L. N. 25.09	Cent.	for	1	£ Sterling.
Amsterdam	— 2.10	—		1	Florin.
Frankfort	— 2.55¼	—		1	Florin W. Z.
Hamburg	— 1.87	—		1	Mark.
Leghorn	— .99½	—		1	Lira.
Lisbon	— 5.60	—		1	Milreis.
Madrid	— 4.90	—		1	Duro.
Milan	— .99½	—		1	Lira
Naples	— 4.38	—		1	Ducat.
Palermo	— 13.10	—		1	Onza.
Paris	— —.99¼	—		1	Franc.
Venice	— —.99½	—		1	Lira
Vienna	— 2.54	—		1	Florin.

The Metrical System is now used.

EXAMPLE.

To exchange £ 814 14 10 into Lire Nuove at 25.10

Lire.

814.7416

25.10

81474160

40737080

16294832

_____

Lire   20450.01   Centisimi.

REVERSE.

To exchange Lire 20450.01 into Sterling at 25.10

L. C.		£		L. C.
If 25.10	——	1	——	20450.01 ?

£

2510) 2045001

_____

£   814 14 10   Sterling.

These calculations are made in the same manner as the French Exchanges; and in reducing Sterling into Lire, the same attention is to be paid to the decimal valuation as is directed in Page 30.

EXERCISES.

Exchange

Ex. 1.   £ 1000 Sterling into Lire Nuove at 24.80

2.   £ 447 16 5 into Lire Nuove at 25.10

3.   Lire N. 10000 into Sterling at 24.95

4.   Lire N. 8487.13 C. into Sterling at 25.80

PRODUCTS.

Ex. 1.   Lire N. 24800.00   Ex. 3.   £ Ster. 400 16 0

2.   Lire N. 11240.30   4.   £ Ster. 328 19 2

R O M E.

100 Bajocchi   1 Scudo Romano.

From the new Standards for the Roman Coins ordered by a Papal Decree of January 11, 1835, the Gold 10-Scudi Piece is worth, very nearly, 42 s. 8d. Sterling, and the Silver Scudo of 10 Paoli, 50½ d. Sterling, the Par of Exchange with London being made Paoli 46.88 in Gold, and Paoli 47.53 in Silver.

WEIGHTS AND MEASURES.

100 Roman Pounds	=	74.77	lb. Avoirdupois.
100 Boccali	=	40.12	Imperial Gallons.
100 Rubbj	=	101.28	Imperial Quarters.
100 Canne of 8 Palmi	=	217.69	Yards.

COURSE OF EXCHANGE.

Naples gives to

London	46 Paoli	for	1	£ Sterling.
Amsterdam	39 Scudi Rom. —	—	100	Florins.
Augsburg	46.80	—	—	100 Florins.
Florence	18.30	—	—	100 Lire
Genoa	18 28	—	—	100 Lire Nuove.
Leghorn	18 40	—	—	100 Lire
Milan	18.58	—	—	100 Lire
Naples	78.80	—	—	100 Ducats.
Paris	18 35	—	—	100 Francs.
Trieste	46.80	—	—	100 Florins.
Venice	- 15.55	—	—	100 Lire Austriache.

London is generally quoted in Bajocchi as 460 at 462.50.

NAPLES.

100 Grani	1 Ducat.

The Ducat is also divided into 5 Tari, or 10 Carlini.

The Neapolitan Ducat, which is of Silver, is called *del Regno ;* its value is 3 s 3¾ d Sterling, making the Par of the Exchange of Naples upon London 603¾ Grani per £ Sterling

WEIGHTS AND MEASURES.

The Cantaro Grosso of 100 Rottoli	=	196.42 lb Avoirdupois.
The Cantaro Piccolo of 150 Libbre of 12 Oz.	=	106.07 Do.
The Barile of Wine	=	9.11 Imperial Gallons
The Tomolo of Wheat	=	1.41 Imperial Bushels.
A Canna	=	83.18 English Inches.

COURSE OF EXCHANGE.

Naples gives to

London	607.	Grani	for 1	£ Sterling.
Amsterdam	50.20	—	— 1	Florin.
Genoa	23.80	—	— 1	Lira Nuova.
Hamburg	44.15	—	— 1	Mark Banco.
Leghorn	23.20	—	— 1	Lira
Lisbon	57.	—	— 1	Crusado.
Madrid	108.	—	— 1	Duro.
Palermo	119.	—	— 1	Scudo of 12 Tari.
Paris	23.75	—	— 1	Franc.
Vienna	60.	—	— 1	Florin.
Venice	20.10	—	— 1	Lira Austriaca.

EXAMPLE.

To exchange £ 500 Sterling into Ducats at the rates of 39½ d per Ducat, and of 607 Grani per £ Sterling.

d	Duc.	£
If 39½ ——	1 ——	500 ?

79   240000 Half pence.

Duc.

79) 240000

Ducati   3037.97   Grani.   1 st Product.

And

Gr.

607
500
———

Ducati   3035.00   2 nd Product.

EXERCISES.

Exchange

Ex. 1.   £ 1000 Sterling into Ducats at 38¾ d.
 2.   £ 818 12 2 into Ducats at 40¼ d.
 3.   £ 651 16 6 into Ducats at 605 Gr.
 4.   Ducats 4000 into Sterling at 39¾ d.
 5.   Ducats 3050.50 into Sterling at 39½ d.
 6.   Ducats 8895.36 into Sterling at 612 Gr.

PRODUCTS.

Ex. 1. Ducats 6193.54	Ex. 4. £ 662 10 0
2. Ducats 4881.14	5. £ 502 1 3
3. Ducats 3943.54	6. £ 1453 9 10

PALERMO.

20 Grani	=	1 Taro.
30 Tari	=	1 Oncia or Onza.

The Scudo is 12 Tari or 2 Oncie are equal to 5 Scudi.

The full value of the Oncia is 10 s 3½ d Sterling, making the Par of exchange of Palermo on London, 58¼ Tari per £ Sterling.

WEIGHTS AND MEASURES

The Cantaro of 100 Rottoli	=	175.03 lb Avoirdupois.
100 Pounds of 12 Ounces	=	70.01 Do.
The Pipe of Wine of 12 Sicilian Barrels	=	94 33 Imperial Gallons.
The Salma of Corn	=	7 61 Imperial Bushels.
The Canna of 8 Palmi	=	76 47 English Inches.

COURSE OF EXCHANGE.

Palermo gives to or *receives from*

London	60	Tari	for	1 £ Sterling.
Genoa	47	Grani	—	1 Lira Nuova.
Leghorn	47	Grani	—	1 Lira
Naples	121	Ducats	— 100	Scudi.
Paris	46¾	Grani	—	1 Franc.
Trieste	5 18	Tari and Grani	—	1 Florin.

EXAMPLE.

To exchange £ 136 12 6 into Oncie at the rates of 120¼ d per Oncia, and 59¾ Tari per £ Sterling.

d		Oncıa		£	s	d
!f 120¼	——	1	——	136	12	6 ?

481 Farth.   131160 Farthıngs.

Oncie.

481) 131160

Oncie   272 20 9   1 st Product.

Also,

Tari.

¼ - -   136.625

      60

8197.500
34.656

           On. Ta. Gr.

Tari   8163.344   =   272   3   10   2 nd Prod.

EXERCISES.

Ex. 1.   £ 1000 Sterlıng ınto Oncıe at 120¼ d.
     2.   £ 865 15 0 Sterlıng ınto Oncıe at 120 d.
     3.   £ 443 16 8 Sterlıng into Oncıe at 60¼ Tari.
     4.   Oncıe 1000 into Sterlıng at 119 d.
     5.   Oncie 453 18 16 ınto Sterlıng at 120 d.
     6.   Oncıe 636 27 10 into Sterling at 59½ Tari.

PRODUCTS.

Ex. 1. Oncie 1991 21 0   Ex. 4.   £ 495 16 8
     2.   1731 15 0   5.   226 16 3
     3.   891 10 19   6.   321 2 8

MALTA.

20 Grani	1 Tari.
12 Tari	1 Scudo.
30 Tari	1 Pezza, or Sicilian Dollar.

The value of the Maltese Pezza is derived from that of the Sicilian Scudo of 12 Tari, which is 49½ d Sterling, but for general purposes of business, it is valued at 50 d. Sterling, and the Maltese Scudo at 20 d. Sterling.

WEIGHTS AND MEASURES.

The Cantaro of 100 Rottoli	=	175.03	lb Avoirdupois.
The Barile of Wine	=	9 35	Imperial Gallons.
The Caffiso of Oil	=	4 50	Imperial Gallons.
The Salma of Corn	=	7.88	Imperial Bushels.
The Canna of 8 Palmi	=	82.40	English Inches.

64 Rottoli $=$ 1 Cwt $\quad$ 3⅜ Palmi $=$ 1 Yard.

COURSE OF EXCHANGE.

Malta receives from

London $\quad$ 49 $\quad$ Pence $\qquad$ for 1 Pezza.

Malta gives to

Genoa	115	Grani	for 1 Lira Nuova.
Leghorn	116	Grani	— 1 Lira
Marseilles	116	Grani	— 1 Franc.
Naples	24½	Tari	— 1 Ducat.
Trieste	15	Tari	— 1 Florin.
Venice	96	Grani	— 1 Lira Austriaca.

THE IONIAN ISLANDS.

CORFU, CEPHALONIA, ZANTE, SANTA MAURA, ITHACA, CERIGO, PAXO.

104 Oboli   =   1 Spanish Dollar.

The money of account is either in Dollars and Oboli, or in Pounds, Shillings, and Pence, the Dollar being valued at 4 s. 4 d. Sterling, or more properly Ionian Currency.

Spanish Doubloons are valued at 16 Spanish Dollars, and German and Venetian Dollars at 4 s. 2 d. I C.

N. B The division of the German Dollar into 100 Oboli, or 500 Obolicci, 10 of which are equal to 1 Penny in currency is in conformity with an Act of the Ionian Parliament, dated January 23, 1836.

WEIGHTS AND MEASURES.

The Imperial Weights and Measures of Great Britain, are employed but with Italian denominations.

The Troy Pound is the Libbia Sottile; the Avoirdupois Pound, the Libbra Grossa. The Centinajo is 100 Libbre, and the Migliajo is 1000 Libbre.

In Measures of Capacity the Gallone is divided into 8 Dicotoli;—8 Galloni make 1 Chilo, (Imp. Bushel), and 16 Galloni, 1 Barile.

In Measures of Length, 5½ Yarde make 1 Carnaco, and 22 Yarde, 1 Stadio.

COURSE OF EXCHANGE.

Corfu receives from

London		51 ¾	Pence	for	1 Sp. Dollar
Ancona		102	Bajocchi		
Naples		123	Grani		
Trieste	Flor.	2.10	Kreuz		
Venice	Lire	6 15	Cent		

GREECE.

ATHENS.

100 Lepta   1 Drachmi.

The value of the 20 Drachmai Piece in Gold, is 14 s. 2$_{\frac{4}{10}}$ d. Sterling, and of the 5 Drachmai Piece in Silver, 3 s. 6 d. Sterling, making the value of the Drachmi in gold 8½ d., and in Silver 8⅞ d. Sterling, and the Par of Exchange Dr. 28.16½ l., in Gold, and Dr. 28.55 l., in Silver, per £ Sterling.

WEIGHTS AND MEASURES.

The Cantaro of 40 Okes	=	112 lb. Avoirdupois.
100 Kila	=	11.44 Imp. Quarters.
100 Pichai—Woollen M.		74.47 Yards.
100 Pichai—Silk M.		69.81 Yards.

N. B.   The Venetian Libbra Grossa is also used, of which the Cantaro of 100 lb   =   105.17 lb. Avoirdupois.

The Long Measures are Venetian, the Pichi for Woollen Measure, being the same as the Venetian Braccio or Ell, and also the same as the Turkish Pike.

COURSE OF EXCHANGE.

Athens gives to

London	Dr.	28.30 l.	for	1	£ Sterling.
Amsterdam	—	236	—	100	Florins.
Hamburg	—	205	—	100	Marks Banco.
Paris	—	109.60	—	100	Francs.
Trieste	—	283½	—	100	Florins.

TURKEY.

CONSTANTINOPLE.

40 Paras	=	1 Piastre.
100 Piastres	=	1 Medjdiè, or Turkish Lira.

The value of the Medjdiè varies in premium, at 77 s. 9 d. per oz. Standard it is worth 17 s. 11¼ d. It is 0¼ gr. worse than British Standard, and weighs 111.359 grs.

The other Gold Coins are the Yarım, or ½ Lira Turca of 50 Piastres, and the Tzeirek, or ¼ Lira Turca of 25 Piastres.

The Silver Coins are pieces of

20 Piastres	=	Ghiumuh, or Silver Medjdiè.
10 —	=	Yarım, — half —
5 —	=	Tzeirek, — quarter —
2 —	=	Tkilik.
1 —	=	Piastre piece.

The intrinsic value of these coins are in proportion to the Lira, and command a similar premium.

The Copper Coins consist of pieces of 5 Paras and 1 Para.

There are a great many small base Silver coins from 6 Piastres, but most of them, if not all, differ so much in purity, as well as in weight, that some of them, the Beschliks, for instance (5 Piastres), are only worth half their nominal value.

Every nation in Europe has contributed to the coinage of Turkey. The £ Sterling commonly passes for 125 Piastres, and the Napoleon for 100. The Silver consists of Five-Franc pieces, and of smaller Russian and Austrian coins.

Money in Turkey commands a premium against Caimè, which is a Paper Money of daily use, and in many places the only medium for transactions. Caimè are from 10 and 20 Piastres, besides Caimè of 100, 250, 500, and 1000 Piastres, which latter bear 6 per cent. interest.

Great caution is to be used in receiving Caimè Notes, many are in such a state as to render it very difficult to read the amounts, and this has led to extensive forgeries of Caimè, which are often presented for payment at the Treasury.

Constantinople gives to

London	150 Piastres for £ 1 Sterling.
Paris	238 Paras — 1 Franc.

WEIGHTS AND MEASURES.

The Rottolo of 180 Drams	=	1.27 lb. Avoirdupois.
The Oke of 400 Drams	=	2.83 lb. Avoirdupois.
The Almud (Liquid Measure)	=	1.15 Imperial Gallon.
The Killow of Corn	=	0.96 Imperial Bushel.
The Pike	=	26⅝ English Inches.

EGYPT.

ALEXANDRIA AND CAIRO.

40 Paras   =   1 Piastre.

The money of Egypt is reckoned to be of the same value as that of Turkey; but by an order of the Egyptian Government of the 16th April, 1836, the following values were given to the following Coins as the money of payment.

	Pias.	pa.		Pias.	pa.
English Sovereign..	97	20	Venetian Sequin ..	46	13
Spanish Doubloon..	313	29	Tallaro Germ D..	20	0
Napoleon, 20 Fr. ..	77	6	Colonato, Span. D.	20	28
Dutch Ducat.....	45	26	5 Franc Piece	19	10

WEIGHTS AND MEASURES

The Cantar of 100 Rottoli, each of 144 Meticals, or 216 Drams, is reckoned equal to 100 lb. Avoirdupois

The Cantar is also estimated as being 36 Okes, and 40 Okes are reckoned equal to 112 lb. Avoirdupois.

N. B. This is the only Cantar now allowed to be used.

The Ardeb of 24 Cairo Rubbie has been appointed as the sole measure for Grain, and it is estimated that 100 Ardebs are equal to 61 Imperial Quarters, or that 164 Ardebs are equal to 100 Imperial Quarters.

The Long Measure is the Turkish Pike, commonly reckoned to be 27 English Inches.

COURSE OF EXCHANGE

Alexandria in Exchange Money of 15 Piastres to 1 Sp. Dollar, gives to

London	74 Piastres	for £ 1 Sterling.

receives from

Marseilles	Frs.	5 15 c.	for	1 Sp. Dollar.
Leghorn	Soldi	120	—	— —
Trieste	Kreuz	119	—	— —

BRITISH PROVINCES.

IN

NORTH AMERICA.

100 Cents   =   1 Dollar.

The moneys of account throughout the United Canadas, **New Brunswick**, Nova Scotia, Prince Edward's Island, Newfoundland, and the territories of the Hudson Bay Company, are either in Pounds, Shillings, and Pence Sterling, in the same denominations of money in a nominal Currency, or in Dollars and Cents.

Sterling money is employed in all the accounts of Government, and in the calculation of Duties to the Crown.

Currency is generally used in the accounts of Merchants, and in the calculation of Provincial Duties, and it is formed from the valuation of the Spanish or American Dollar at a higher rate than its value in Sterling.

In Halifax Cnrrency, which prevails throughout these Provinces, the Dollar is valued at 5 Shillings or 60 Pence, Currency, and as the legal value in Sterling, by the Order in Council or Royal Proclamation of the 14th September 1838, is only 4 s. 2 d. or 50 pence, the Par Agio, or Premium on Sterling, is equal to 20 per Cent

It is not, however, in this manner that the valuation of Currency is made, for what is called Sterling, in the usual language of Canadian Exchanges, is the valuation of the Dollar at 4 s. 6 d , between which and Halifax Currency the relation is as 9 to 10, making £ 90 in nominal Sterling (in Dollars at 4 s. 6 d.) equal to £ 100 in Halifax Currency; hence, the Par Premium on the nominal Sterling is equal to 8 per Cent.

WEIGHTS AND MEASURES.

The Weights and Measures are those of Great Britain, but generally with the old measures of capacity in Wine Gallons and Winchester Bushels.

In Lower Canada, Wheat is measured by the Minot, an old French Measure, about 8 per Cent larger than the Winchester Bushel. Grain is, however, commonly sold by weight. Land also is measured by the Arpent, another old French Measure, which is reckoned to be about 15¼ per Cent less than the English Acre, 100 Acres being valued at 118 Arpents.

Exchanges.

The exchanges of these provinces with London are made either direct, or through the medium of New York and Boston.

The rate of exchange of Montreal was lately quoted at 9¼ per Cent, for bills at 60 days' sight

Example.

To find the amount in Sterling to be remitted from Montreal for 1000 Dollars at the exchange of 8 per Cent.

$$
\begin{array}{rcl}
 & & 1000 \quad \text{Dollars} \quad ? \\
4 & = & 1 \quad £ \ \text{Currency} \\
1,0 & = & 9 \quad £ \ \text{Nominal Sterling.} \\
108 & = & 10,0 \quad £ \ \text{Sterling.}
\end{array}
$$

$$
\begin{array}{rr}
 & £ \\
108 & 10000 \\
4 & 9 \\
\hline
432 \quad) & 90000 \\
\hline
£ \quad 208 \ 6 \ 8 & \text{Sterling.}
\end{array}
$$

By separate valuations we find, that 1000 Dollars at 5 s. each, are worth £ 250 Currency; which at the rate of £ 10 Currency for £ 9 in nominal Sterling, are equal to £ 225 1 nominal Sterling; which, at the rate of 8 per Cent difference in favour of actual Sterling, produce £ 208 6 8; which amount is the value of 1000 Dollars at 4 s. 2 d. each.

THE UNITED STATES.

100 Cents	1 Dollar.

In the mercantile and bill transactions between the United States and this country, the U. S. Dollar is generally valued at the fixed par of 4 s. 6 d. Sterling, making 40 Dollars equal to £ 9 Sterling, or, as expressed in some places, 444 Dollars 44 Cents equal to £ 100 Sterling, and the variations of exchange are made by Per-centage Premiums or Discounts on the Sterling Amounts ; but in the Custom-House valuations for the payment of *ad-valorem* Duties, according to the orders of a late Act of Congress, the Pound Sterling is valued at 4 Dollars 80 Cents, making the value of the Dollar 4 s. 2 d , and being equal to a Premium of 8 per Cent. on the par of 4 s. 6 d. per Dollar.

In the course of exchange of New York, there are frequently double forms of rates given for Bills on London and France, as in the following list.

COURSE OF EXCHANGE.

New York

London	.	.	.	.	8¾	Premium.
	or U. S. D.	4.85	Cts. for	1	£ Sterling.	
France	Francs	5.37	—		U. S. Dollar.	
	or U. S.	18⅝	—		Franc.	
Hamburg	—	35¼	—		Banco Mark.	
Amsterdam	—	40½	—		Florin.	
Bremen	—	80	—		Rix-dollar.	

Bills on Europe are generally drawn at 60 days' sight. The Days of Grace are 3, as in England.

WEIGHTS AND MEASURES.

The same as those of Great Britain, but with the late Measures of Capacity.

COINS.

GOLD.—By an Act of Congress, April 12, 1792, the Gold Eagle, valued at 10 Dollars, with its halves and quarters in proportion, was ordered to weigh 270 grains, or 11 dwts. 6 grs , and to contain 247½ grs. of pure Gold. Hence its purity was 22 carats, or the same as British Standard, and its value, at 77 s. 10½ d. per oz. Sterling, was 43 s. 9 65 d. ; the value of the Dollar in Gold was 4 s. 4.56 d., and the Par of Exchange with this country, in Gold, was D. 4. 46¼ c. per £ Sterling, or nearly 2½ per Cent. premium.

This Standard was altered by an Act passed in 1843, and the Eagle was ordered to contain 232 grains of pure Gold, and to weigh 258 grs., or 10 dwts. 18 grs., by which regulations the purity of the Federal Gold Coins was reduced from 916·6 to 899.2 fine, or about 1¾ grs worse than British Standard.

The British Assay Report of the new Half-Eagle makes the full weight 5 dwts. 9 grs., and the purity 2 grs. worse. Hence the Standard weight is 5 dwts. 6.06 grs., the fine weight 115.56 grs , and the value 20 s. 5.4 d. Sterling.

The value of the Dollar, in Gold, is therefore 4 s. 1.08 d., and the Gold Par of Exchange D. 4 89 c. per £ Sterling, or about 10 per Cent. premium.

SILVER.—The full weight of the Dollar in Silver was by the Act of 1792 fixed at 416 grs., or 17 dwts. 8 grs., and the Dollar was ordered to contain 371¼ grs. of pure Silver; hence its mintage purity is nearly 892.4 fine, or nearly 8 dwts. worse than the British Standard; giving for the weight of British Standard Silver 16 dwts. 17 grs., and for the value at 60 d. per oz Standard, 50⅛ d. Sterling; making the Silver Par of Exchange D. 4 78¾ c. per £ Sterling, or 7½ per Cent. premium.*

* For Assay Reports of the late American Eagle, and the American Dollar, see pages 195, 199, 200.

By the Act of 1843, the Gold Coins of Great Britain, Portugal, and Brazil, of not less than .915½ fine, are allowed to be received in payment, at the rate of 94.6 cents per dwt., or 3.95 cents per grain.—Those of France, of not less than .899 fine, at 92.9 cents per dwt.

Also, the Dollars of Mexico, Peru, Chili, and Central America, with the restamped Dollars of Brazil, weighing not less than 415 grs., and being of not less fineness than .897 fine (7 dwts. W.), are to be reckoned of equal value with the Federal Dollars, or 100 cents each. Five-Franc Pieces of France, of not less purity than .900 fine, and weighing not less than 384 grs., are valued at 93 cents each.

The value given to the English Sovereign in the Tariff Tables, is Doll. 4.84,6, from the weight of 1500 Sovereigns being found to be 31 lb. 11 oz. 7 dwts. 12 grs., or 1 oz. 17 dwts. 4 grs. less than the full mintage weight. This gives for the average weight of the Sovereign 122.68 grs., which are thus valued at 3.95 cents per grain.

$$\text{Doll.} \quad 1.22,68 \text{ cts.}$$
$$400$$

$$\frac{1}{80} \quad - \quad - \quad 4.90,72$$
$$6,1$$

$$\text{Doll.} \quad 4.84,6 \text{ cts.}$$

The former weight of fine Gold in the Eagle was exactly 2-3rds of that of Silver in the Dollar, and the relative value of Gold to Silver was therefore as 15 to 1 ; the present weights of the same, make the relative values as $16\frac{1}{184}$ to 1, increasing the value of Gold a trifle more than $6\frac{2}{3}$ per Cent.

EXCHANGES.

DRAFTS ON LONDON FROM THE UNITED STATES.

EXAMPLE.

To find the amount of a Bill in Sterling to draw, in New York, for U. S. D. 13512.71; the Premium being 10¼ per Cent, and the Brokerage on the amount of the Bill being ¼ per Cent.

D.	D.	D. c.
If 110¼ ——	100 ——	13512.71 ?
4		400
441		441) 5405084
		D. 12256.43

D.	D	D. c.
If 99¾ ——	100 ——	12256.43 ?

Ans. D. 12287.15 c.

£
12287.15
9

40) 110581.35

£ 2764 12 2 Sterling.*

The above is frequently expressed in the following manner.

	£	s	d
U. S. D. 13512.71 at par =	3040	7	2
With Brokerage ¼ per Cent on £ 3047 19 7 - - -	7	12	5
	3047	19	7
Less Exchange 10¼ per Cent on £ 2764 12 2 - - -	283	7	5
Amount of the Draft - -	£ 2764	12	2

* In the division by 40, the remainder, 24, gives so many sixpences; and 6 times 35, divided by 100, give 2 pence

The preceding formula also serves for calculations made for the purpose of finding the amount to be paid here, in order to obtain a credit in the United States; thus, at the preceding rates, to obtain a credit there for U. S. D. 13512.71, the sum of £ 2764 12 2 would be required to be paid in this country.

If it were required to find the credit to be given for the payment of a given amount in Sterling, the order of the parts of the statement would be reversed; thus, with the same rates,

	£	s	d			
Amount paid -	2764	12	2			
With Premium -	283	7	5			
	3047	19	7			
Less Commission	7	12	5			D. c.
£	3040	7	2	=		13512.71

This is also a very common form for showing the credit to be given for drafts on this country.

Partly repeating what has been said in page 168, we may observe, that when the Commission or Brokerage is a charge on the result, it may be calculated on the given amount, by applying a correction of the same per Centage, in the same manner as that in which the charge is to be made: as in the last page,

		D.	c.	
4to	-	-	12256.43	Given amount.
		30.64		
add	-	-	8	Correction.
add	-	30.72		Commission.
		12287.15		Result.

REMITTANCES TO LONDON FROM THE UNITED STATES.

EXAMPLE.

To find the amount of a Bill in Sterling, in order to remit U S. D. 13512.71 from New York, the Premium being 10¼ per Cent, and the Brokerage on the Bill, ¼ per Cent.

```
        D.              D.               D.  c.
If  100¼   ——   100    ——   13512.71   ?
                                 ————————
                                 33.78
                                     8
                                 ————————
                     Brokerage -  - 33.70
        D             D.             ————————
If  110¼   ——   100    ——   13479 01   ?
```

Answer D. 12225.86   =   £ 2750 16 4 Sterling.

The above may be thus stated :

	£	s	d
U S. D. 13512.71 at par =	3040	7	2
Less Premium 10¼ per Cent			
on £ 2757 13 11 - - -	282	13	3
	2757	13	11
Less Brokerage ¼ per Cent			
on £ 2750 16 4 - - -	6	17	7
	£ 2750	16	4

Although the above is the order in which the calculation would be made, for finding the amount of the Bill to be remitted, yet when that amount was determined, the form of showing the particulars would be as follows ; affording, as in the preceding example, a proof of the accuracy of the calculation.

	£	s	d
Amount remitted - -	2750	16	4
Premium 10¼ per Cent	281	19	2
	3032	15	6
Brokerage ¼ per Cent	7	11	8
	3040	7	2 = D. 13512.71

In the same manner the amounts are found, that are to be charged, in the United States, for remittances to this country in Sterling.

Respecting the Rate of the Commission or Brokerage, it is to be noticed, that although the usual rate is ¼ per Cent, yet it is not invariably this per Centage; also, that in calculations in which it occurs with the per Centage rate of exchange, it is immaterial which is first calculated.

Thus with the above,

	£	s	d
Amount remitted - -	2750	16	4
Brokerage - - - -	6	17	7
	2757	13	11
Premium - - - - -	282	13	3
	£ 3040	7	2

The preceding examples and observations appear to comprise most of the particulars relating to drafts and remittances, combined with charges, that require any explanation.

The following examples of finding arbitrated pars of exchange for government of indirect remittances with France and Hamburg, show the mode to be followed for those with Amsterdam and Bremen. To these are added an example of an arbitrated rate of exchange from Bar Gold.

Arbitrations of Specie are not here noticed; but for formulæ of these calculations, and tables of pars deduced from actual operations, as well as for much valuable commercial information, reference may be made to the " Calculations and Statements relative to the Trade between Great Britain and the United States of America, by W. F. Reuss, Esq."

ARBITRATED RATES OF EXCHANGE.

UNITED STATES, GREAT BRITAIN, AND FRANCE.

EXAMPLE.

In New York, Bills on London are 10¼ per Cent Premium, on France Frs 5.35 per Dollar.   It is required to find which would form the most advantageous remittance to this country, supposing French Bills to sell in London at Fr. 25.80 per £ Sterling, and to be attended with ½ per Cent, extra Charges, the discount on English Bills, being for 60 days at 4 per Cent per Annum.

$$1 \quad £ \quad ?$$

$$100 \quad - \quad 110\tfrac{1}{4} \text{ with Pr.}$$
$$9 \quad - \quad 40 \quad \text{Dollars}$$
$$1 \quad - \quad 5.35 \quad \text{Francs}$$

Frs 5.35 × 40 × 1,10¼ ÷ 9   =   Frs 26.21.5

deduct, Charges ½ per Cent   -   -   13.1

_____

26.08.4

Price in London   •   -   Fr. 25.80

Discount 60 days   17.2

_____

25.62.8

Gain by French Bills   -   -   -   Cts   45.6

Cts 45 6   on   Frs 26   =   1¾ per Cent.

TABLE OF ARBITRATED PARS

From Rates of Exchange on France and London.

Rates per D.	Premiums per Cent.				
	6	7	8	9	10
Fr c	Fr c	Fr c	Fr c	Fr c	Fr c
5.20	24.49.7	24.72.8	24.96	25.19.1	25.42.2
– 25	—.73.3	—.96.6	25.20	—.43.3	—.66.6
– 30	—.96.8	25.20.4	—.44	—.67.5	—.91.1
– 35	25.20.4	—.44.2	—.68	—.91.7	26.15.5
– 40	—.44.–	—.68.–	— 92	26.16.–	—.40.–
– 45	—.67.5	—.91.7	26.16	—.40.2	—.64.4
– 50	—.91.1	26.15.5	—.40	—.64.4	—.88.8

NEW YORK, LONDON, AND HAMBURG.

Example.

In New York, the price of Bills on London is $10\frac{1}{4}$ per cent Premium, and on Hamburg, $35\frac{1}{4}$ Cents per Mark Banco. In London, the selling price of Hamburg Bills is 13 Mks 13 sch. per £ Sterling. It is required to find which would form the most advantageous remittance to this country, the charges and interest being the same as in the last Example.

$$
\begin{array}{rcl}
& 1 & \text{£} \quad ? \\
100 & - & 110\frac{1}{4} \ \text{with Pr.} \\
9 & - & 40 \quad \text{Dollars} \\
1 & - & 100 \quad \text{Cents} \\
35\frac{1}{4} & - & 1 \quad \text{Mark Banco.}
\end{array}
$$

M. B. $40 \times 110\frac{1}{4} \div (9 \times 35\frac{1}{4})$ = M. B. 13 14.4 sc

deduct Charges $\frac{1}{2}$ per Cent   -   -   1.1

                                13 13 3

Price in London   -   -   -   13.13.–

Discount 60 days   •   —.7

                                13 12.3

Gain by Hamburg Bills   -   -   - Sc.   1 0

Sch. 1 on B. M. 13 12   = $\frac{9}{20}$ per Cent.

TABLE OF ARBITRATED PARS

From Rates of Exchange on Hamburg and London.

Rates per Mk.	*Premiums per Cent.*				
	6	7	8	9	10
Cts	M s	M s	M s	M s	M s
34-	13 13.6	13 15.7	14 1.8	14 3.9	14 6.–
$-\frac{1}{4}$	— 12.–	— 14.1	— 0.2	— 2.3	— 4.3
$-\frac{1}{2}$	— 10.4	— 12.5	13 14.6	— 0.6	— 2.7
$-\frac{3}{4}$	— 8.9	— 10.9	— 13.–	13 13.4	— 1.–
35-	— 7.3	— 9 3	— 11.4	— 11.8	13 15.4
$-\frac{1}{4}$	— 5.8	— 7.8	— 9.8	— 10.3	— 13.9
$-\frac{1}{2}$	— 4 3	— 6.2	— 8.3	— 8 8	— 12.3
$-\frac{3}{4}$	— 2.8	— 4.8	— 6 8	— 7.3	— 10.8

BAR GOLD, LONDON TO NEW YORK.

EXAMPLE.

The price of Standard Gold in London being **77 s 9 d** per oz, it is required to find the arbitrated rate of exchange produced by its export to the United States, for coinage there, at the mintage rate of **232** grains of pure Gold for the Eagle of 10 U. S. Dollars.

$$
\begin{array}{rcl}
 & 20 & \text{s} \quad ? \\
77\frac{3}{4} \; * \; — & 480 & \text{grs St.} \\
12 \; — & 11 & \text{fine} \\
232 \; — & 10 & \text{Dollars}
\end{array}
$$

$$2200 \times 480 \; \div \; (\, 232 \times 12 \,) \; = \; 379\,31 \text{ Fixed No.}$$

$$77\tfrac{3}{4} \,)\, 379\,31$$

$$\text{Dollars} \quad 4\,87,85 \quad \text{per } £ \text{ Sterling.}$$
$$90$$

$$4 \,)\, 439\,06,50$$

$$£ \quad 109\tfrac{3}{4} \quad \text{per } 100 \; £ \text{ Sterling,}$$

or $9\tfrac{1}{4}$ per C nt Premium.

In order to compare this rate with the prices of Bills, it must be corrected for the charges of transport and expenses in America, together with the Interest for the outlay of the money, and the mintage charge.

Sovereigns generally give a better rate of exchange than Bar Gold. A late quotation, Doll. 4.86 each Sovereign, was equal to $9\tfrac{1}{4}$ Premium.

WEST INDIES.

100 Cents = 1 Dollar.

Accounts are kept either in Pounds, Shillings, and **Pence** Sterling, or in Dollars and Cents, valuing the Dollar at the Government Par of 4 s 2 d. and the Doubloon at 64 s. Sterling.

Exchange is made with London either by valuing the Dollar at a variable number of Pence per Dollar, or by a per Centage Premium on Sterling, as when the Premium is at 2 per Cent. £ 102 in Money or in Account will be the value of a Bill for £ 100 Sterling

WEIGHTS AND MEASURES

The Weights and Measures are generally the same as those of Great-Britain, but with the former Measures of Capacity.

The late Currencies have been abolished in all these Islands, both in accounts and in exchanges, but as they are occasionally referred to, the following statement of them is here given.

In Jamaica Currency, the Dollar was valued at 6 s. 8 d Currency.
    Barbadoes Currency . . . . 6 s. 3 d. —
    Leeward-Island Currency .   . . 9 s. 0 d. —
    Bahama Currency . .   . . 10 s. 0 d —

In most of these Islands, a fixed valuation was made of the Currency against a nominal Sterling, and then the variations in the exchange were made by a per Centage upon the actual Sterling, as, at present, in the Halifax Currency; in some of them the nominal Sterling or Currency Par was not regarded, and the exchange was made direct with Sterling, and in others the exchange was made, as it frequently now is, by a variable number of pence for the Dollar, or by a variable number of Dollars for £ 100 Sterling

EXAMPLE.

To exchange United States Doll. 13512.71 Cents into Sterling at 10¼ per Cent Premium.

```
                              13512.71   Dollars ?
         40                          9   £ Sterling.
         110¼                      100   £ Sterling.


                        £
                   135127.1
                        9
                                   £    s.   d.
   441      )  1216143.9  (    2757  13  11    Sterling.
                   3341
                   2544
                   3393
                   ) 3069 ( 696
                    423
                     26
```

EXERCISES.

Ex. 1. Exchange £ 674 13 s. Halifax Currency into Sterling at 8½ per Cent Premium.   *Product* £ 559 12   4.

2. Exchange Dollars 8437 64 c United States Currency into Sterling, at 9¼ per Cent Prem.   *Product* £ 1737 14   7.

3. Exchange Dollars 6420.00 in Jamaica into Sterling, at 1¾ per Cent Premium.   *Product* £ 1314   9 11.

4. Exchange £328 11 5 in Barbadoes into Sterling, at 1½ per Cent Premium.   *Product* £ 323 14   3.

5. Exchange Dollars 3758.92 c in the Havana, into Sterling at Doll. 444 per £ 100 Nom. Sterling, at a Premium of 10¾ per Cent.   *Product* £ 764   8   6.

SOUTH AMERICA.

SPANISH SETTLEMENTS.

In all the Spanish Settlements forming the present Republics of South America, in Mexico and the adjoining States in North America, as well as in Cuba and Porto Rico, the principal integer of account is the Dollar, which is generally divided into 8 Reales, each of 12 Dineros or 16 Quartos, though it is also by many divided into 100 Cents.

WEIGHTS AND MEASURES.

These are generally the same as those of Spain (see page 90), but English measures are also used.

100 Spanish Pounds are commonly reckoned equal to Pounds Avoirdupois, and 108 Varas to 100 English Yards.

COURSE OF EXCHANGE.

The chief of the Bills drawn in these States are upon London, and the rate of Exchange varies from 2¾ d. Sterling, the present rate for the Paper Dollar in Buenos-Ayres, to 50 pence, more or less, for the Hard Dollar, in those States in which there is no depreciated Paper Currency.

In the Havana, the Par of Exchange with London is 444 Dollars per £100 nominal Sterling, with a premium upon actual Sterling, as in the United States.

In Sr. Jago de Cuba the Par is 4.20 Dollars per £ Sterling, with a premium on the Dollar.

Bills on Paris, Amsterdam, and Hamburg, are occasionally drawn. On these places the rate is generally a variable number of Centimes, of Francs or Florins, or Schillings Banco, for the Dollar; but in the Havana, the Par with France is 5 Francs for the Dollar, with a variable Premium or Discount

BRAZIL.

——

THE value of the Milreis of 1000 Reis in Gold, is **43** d. Sterling. estimating the Moeda of 10,000 Reis, (the former Joanese of 6400 reis,) from its full mintage rates, at 35 s. 11 d. Sterling.*

The value of the Milreis in Silver is 41⅞ d. Sterling, reckoning the Brazilian Pataca or Dollar of 1200 Reis at 50 ¼ d. Sterling.

The rate of exchange for the Milreis in paper currency, the present legal money of Brazil, greatly depends upon the fluctuating value of the principal Coins in that currency : thus at the time of the following quotation, the price, in paper, of the Moeda was 16,200 Reis, making the Milreis 26½ d. Sterling.

The Brazilian Weights and Measures of length are the same as those of Portugal †

100 Arretels or Pounds	=	101.18 lb. Avoirdupois.
1 Arroba of 32 Pounds	=	32.38 — —
100 Covados	=	74.14 Yards.
100 Varas	=	119.83 —
100 Medidas	=	59.54 Imperial Gallons.
100 Alquieres	=	13.87 Imperial Quarters.

The Mark is 8 Ounces, or 64 Oitavas each of 72 Grains.

$$1000 \text{ Marks} \quad = \quad 7378\tfrac{1}{8} \text{ Oz. Troy.}$$

COURSE OF EXCHANGE.—Rio DE JANEIRO

London	26¼	pence for	1 Milreis.
Paris	365	reis —	1 Franc.
Hamburg	676	reis —	1 Mark Banco.

---

* From the purity of these pieces, being full ⅛ grain below the Standard, the intrinsic value, at 77 s. 9 d. per Oz. Sterling, is about 35 s. 7 d.

† Various provincial measures are used in parts of the Empire, but they are not legal. English measures are also occasionally used. 100 Brazilian pounds are sometimes reckoned at 101¼ or 101½ lb. Avoirdupois. The Covado of Brazil is the Covado, good measure, of Portugal, of 24¾ instead of 24 pollegadas. It is commonly reckoned that 5 Varas are 6 yards, that 27 Covados are 20 Yards, or, in Custom-house measure, and that 6 Varas are 7 yards, also that 140 Medidas are 140 Old Wine Gallons, and that 10 Alquieres are 11 Imperial Bushels.

CAPE OF GOOD HOPE.

4 Stivers	=	1 Shilling.
8 Shillings	=	1 Rix-Dollar.

Accounts are kept chiefly in British Currency, but the former Dutch Currency is also used, the value of the Rix-Dollar, in paper, being fixed at 1 s 6 d Sterling

WEIGHTS AND MEASURES.

Both the English and the former Dutch Weights and Measures are employed.

The Centner or 100 lb D. W.	=	108 93 lb. Avoird.
The Legger or Leaguer of 15 Ankers	=	126 63 Imp. Gallons.
The Muid of 4 Schepels	=	3 06 Imp. Bushels.
The Ell of 27 Rhynland Inches	=	27 82 Inches.

MAURITIUS.

100 Cents	=	1 Current Dollar.

Mercantile accounts are kept in Current Dollars a nominal Coin divided into 100 Cents, but those of the Government, as in the other British Colonies, are kept in Sterling

The par of valuation of the Current Dollar is 4 s 2 d. Sterling, the value here given to the Austrian Dollar and the French Five Franc Piece. The Spanish Dollar is rated at 4 s 4 d.

WEIGHTS AND MEASURES.

The old French Weights and Measures are commonly employed. Those of England are used for the Import Duties.

100 lb. Poids de Marc	=	107.92 lb. Avoirdupois.
100 Veltes	=	165 71 Imp. Gallons.
100 Aunes	=	130.13 Yards.

N. B. In common reckoning

100 lb. Poids de Marc	=	108 lb. Avoirdupois.
1 Velte	=	2 Wine Gallons.
7 Aunes	=	9 Yards.

EAST INDIES.

CALCUTTA. MADRAS. BOMBAY.

CALCUTTA AND MADRAS.

12 Pie	=	1 Anna.
16 Annas	=	1 Rupee.

BOMBAY.

100 Reas	=	1 Quarter.
4 Quarters	=	1 Rupee.

The Silver Rupee, now coined at the mints of the territories of the East India Company, is called the Company's Rupee, and is of the same weight and purity as the Madras Rupee; (see pages 200 and 201;) that is, it weighs 180 grains, or 7 dwts 12 grs, is of the purity of 11-12 ths fine, (or worse 2 dwts,) and contains 165 grains of pure Silver.—Its weight of Standard Silver is therefore 7 dwts 10.37 grs, and its value at 60 d per oz St. is 1 s 10.29 d Sterling.

It is declared, by an act of the Government, dated Aug. 17, 1835, to be equivalent in value to 15-16 ths of a Sicca Rupee; which according to the late mintage regulations weighed 7 dwts 23 916 grs of Silver of the same purity, and was therefore equal to 7 dwts 22.18 grs of Standard Silver, and was worth, at the above rate, 1 s 11.77 d Sterling.*

The Gold Mohur, or Fifteen Rupee Piece, is of the same weight and purity as the Rupee; its full weight is therefore the same as the Madras Mohur, (see page 195,) and reckoning it to be of full standard purity, or 22 carats fine, its value, at the British mintage rate, is 29 s $2\frac{7}{16}$ d.

A Lac is 100.000 and a Crore is 10 Millions of Rupees.

* For British Assay Reports of the Company's former Coins, see pages 195, 200 and 201.

The exchanges on London of Calcutta, Madras, and Bombay at present-average about 1 s 11¾ d per Company's Rupee.

The general term for Private Bills is 6 months' sight. Treasury Bills are usually drawn at 30 days' sight.

N.B. At SINGAPORE accounts are kept in Spanish Dollars and Cents, the rate of exchange on London being about 4 s 1 d per Dollar, and on Calcutta 218 Company's Rupees per 100 Dollars. The common weight is the Chinese Pecul (see page 135).

WEIGHTS AND MEASURES.

BENGAL.

1 Maund	=	40 Seers	=	640 Chittacks.
1 Factory Maund	=		74⅝	lb Avoirdupois.
1 Bazar Maund	=		82₁⁹₁₁	lb Avoirdupois.
1 Guz of 2 Cubits	=		1	English Yard.
10 Bazar Maunds	=		11	Factory Maunds.
3 Factory Maunds	=		2	Cwt Avoirdupois.

MADRAS.

1 Candy	=	20 Maunds	=	160 Vis	=	6400 Pollams.
1 Candy	=			500		lb Avoirdupois
1 Maund	=			25		lb Avoirdupois.
1 Garse	=			16⅞		Imperial Quarters.
1 Covid	=			18¼		English Inches.

The Garse is 80 Parahs, or 400 Marcals, and when estimated by weight, it is equal to 8400 lb Avoirdupois.

BOMBAY.

1 Candy	=	20 Maunds	=	800 Seers.
1 Candy	=		560	lb or 5 cwt Avoirdupois.
1 Maund	=		28	lb or 1 qr cwt.
1 Candy (Dry M.)	=		24½	Imperial Bushels.

C H I N A.

1 Tael = 10 Mace = 100 Candereens = 1000 Cash.

These monies, for which the Chinese terms are Leäng, Tseen, Fun, and Le, are formed by weights, under the same denominations, of Sysee Silver,* the Cash being also represented by cast pieces of coarse metal.

The value of the Tael, as being pure, and as weighing 583⅓ grains Troy, at 60 d per oz Standard, would be worth 78¾ d Sterling, but as it averages only about 98 touch, or 980 fine, a little above 13 dwts better than Standard, its value is 77¾ d, to which may be added 1⅜ d for the worth of the Gold which it contains, and which makes the full value 78⅝ d Sterling.

Accounts are kept by foreign Merchants trading with China in Dollars, each of 100 Cents. This Mercantile Currency is valued at the nominal rate of 720 Taels for 1000 Dollars, with a variable per Centage for the reduction into Sysee Silver.

It may be observed that, according to the arrangements entered into between the English and Chinese Plenipotentiaries, respecting the payments to be made to this country, it was agreed, that for such portions of them as should be made in Sysee Silver, 710 Taels of this Silver were to be rated as 1000 Dollars, which, taking the average net value of the Tael at 78 d, gives an average exchange of 55⅛ d per Dollar.

* This Silver by the Chinese is denominated Wan-yin, "Fine Silver;" but it is termed, in foreign commerce, *Sysee*, from the colloquial pronunciation of the phrase *Se-sze*, which implies that the Silver is as fine, or may be drawn out as fine as silk; in other words, 'the purest Silver.'

It has generally been supposed and stated, that the Tael in monetary weight was less than the same in commercial weight; but this has been proved to be an error, for in the Mint account of the Sysee Silver imported by the Conway, it appears that 1,016,000 Taels of this Silver, when cleansed and purified of the dust, &c, weighed oz 1,232,508 15 dwts, making the average weight of the Tael full 582¼ grains Troy, and consequently the gross weight must have been, at the least, equal to that given in the estimate of the commercial weights.

That the average quality of this Silver is equal to what is above stated, may be seen from the following produce of 400 Bars, in running numbers and taken without selection, of the Sysee Silver lately sold by the government to the

WEIGHTS AND MEASURES.

Weights in China are ascertained by the steelyard.

1 Pecul = 100 Catties = 1600 Taels.

It is estimated that 3 Peculs are equal to 400 lb Avoirdupois, hence the Catty is equal to $1\frac{1}{3}$ lb Avoirdupois, and the Tael to $583\frac{1}{3}$ grains Troy. Hence also—

1 Cwt English	=	84	Catties.
100 lb Avoirdupois	=	75	Catties.
100 oz Troy	=	$82\frac{2}{7}$	Taels.

Liquids are sold by weight, but in the foreign trade, Arrack is sold by the English Gallon, and Wine, &c, in bottles, by the number of the bottles.

Grain of most kinds, among the Chinese, is commonly sold by measure, of which the Shing is reckoned to be equal to the English Pint—10 Hŏ make 1 Shing; 10 Shing, 1 Tow; and 10 Tow, 1 Hwüh, or 120 Catties. In dealings with foreigners, however, and in large dealings among themselves, the Chinese sell Rice and other grain by the Catty and Pecul weights.

Piece goods are measured by the Chang. Each Chang consists of 10 Chĭh or cubits, and is equal to 141 English Inches: hence 12 Chang are equal to 47 English Yards.

Bank of England, from assays made by Mr Bingley, the Queen's Assayer to the Royal Mint. The gross weight of the Bars was lb 28,843 5 10, the betterness was lb 1704 8 1, and therefore the standard weight, lb 30,584 1 11, making the betterness fully equal to $13\frac{1}{4}$ dwts in the pound Troy.

The same Bars, after deducting at the rate of 5 grains in the pound Troy, for the expense of extraction, yielded 213,753 grains of Gold, giving an average net of full 7 grains per lb, or 7-10ths of a grain per Tael, which with the betterness renders Sysee Silver worth, net, full $4\frac{1}{2}d$ per ounce more than British Standard Silver.

It may be further remarked that the Sysee Silver per the Conway, yielded at the rate of $78\frac{1}{4}$ d per Tael, making $55\frac{1}{2}$ d per Dollar, and therefore supposing the Dollars transmitted by the same vessel to have been worth 50 d each, the Sysee Silver gave an average profit to this country of 11 per Cent. Also, that the rate of valuation for Mercantile Currency, may possibly have been deduced from the value of the Spanish Dollar coined before the year 1730. It weighed a Spanish ounce, was 11-12ths fine, and was intrinsically worth 55 d sterling, with some additional value as being coined Silver.

CROSS EXCHANGES

Cross Exchanges are the Exchanges between Foreign Countries. Thus, at London the Exchanges between Paris and Hamburg, Paris and Amsterdam, &c. are termed Cross Exchanges.

EXAMPLES

PARIS.

To exchange 10000 Francs with

HAMBURG, at 185

Frs		Mks		Frs
If 185	—	100	——	10000 ?

Marks 5405 6 Sch. Banco.

AMSTERDAM at 209¼

Frs.		Flor.		Frs.
If 209¼	——	100	——	10000 ?

Florins 4778,97 Cents.

FRANKFORT, at 212⅜.

Frs.		Flor.		Frs.
	——	100	——	10000 ?

Florins 4705.52 Kr.

Note. For an explanation of the rates employed in Cross Exchanges, the Formula of the Course of Exchange of the place making the operation, is to be consulted.

AMSTERDAM·

To exchange 10000 Florins with

PARIS, at 57.

Fl.	Fr.	Fl.
If 57	120	10000?

1200000

Francs 21052   63 Cents.

HAMBURG, at 35.

Fl.	Mks.	Fl.
If 35 ——	40 ——	10000 ?
7	8	

Mks.
$\frac{1}{7}$ —10000
1428   9

Marks 11428   9 Sch.

FRANKFORT, at 100¼.

Fl.	Fl.	Fl.
If 100 ——	100¼ ——	10000?

Fl.
10025

HAMBURG.

To exchange 10000 Marks Banco with

PARIS, at

Mks.		Fr.		Mks
If 100	——	188½	——	10000?

Francs 18850.00

AMSTERDAM, at 35½.

Mks.		Fl.	C.		Mks.
If 40	——	35	50	——	10000?

Flor.

40) 355000.0

Florins 8875.00

FRANKFORT, at 148¼.

Mks.		Z.V.G.		Mks.
If 100	——	88¼	——	10000?

100) 882500

Z.V.G. 8825

FRANKFORT ON THE MAINE.

To exchange 10000 Florins with

PARIS, at 93¼

Fl.		Fr.		Fl.
If 93¼	——	200	——	10000 ?
373	) 8000000			

Francs 21447 72 Cents.

AMSTERDAM, at

		Fl.		Fl.
If 98½	——	100	——	10000?
197		200		

Flor.

197) 2000000

10152 28 Cents.

HAMBURG, at 88¼.

Fl.		Mks.		Fl.
If 88¼	——	100	——	10000?
353	) 4000000			

Marks 11331 7 Sch. Banco.

Exercises on Cross Exchanges.

Ex. 1. Exchange Francs 14172 84 Cts. at PARIS with

AMSTERDAM, at 209¼.

If 209¼ Francs — 100 Flor.
— Francs 14172.84 ?

VIENNA, at 253.

If 253 Francs — 100 Flor.
— Francs 14172.84 ?

HAMBURG, at 185¼.

If 185¼ Francs — 100 Mks.
— Francs 14172.84 ʻ

GENOA, at 99¼.

If 99¼ Francs — 100 L. N.
— Francs 14172.84 ?

FRANKFORT, at 212½.

If 212½ Francs — 100 Flor.
— Francs 14172.84 ?

LEGHORN, at 83.

If 83 Francs — 100 L. T.
— Francs 14172 84 ?

PETERSBURGH, at 401.

If 401 Francs — 100 Rubles
— Francs 14172.84 ?

MILAN, at 84½.

If 84½ Francs — 100 L. A.
— Francs 14172.84 ?

Ex. 2. Exchange Florins 4769 50 Cts. at AMSTERDAM w

PARIS, at 57¼.

If 57¾ Flor. — 120 Francs
— Flor. 4769.50 ?

NAPLES, at 80.

If 80 Flor. — 40 Ducats
— Flor. 4769.50 ?

FRANKFORT, at 100⅝.

If 100⅝ Flor. — 100 S. D. W.
— Flor. 4769.50 ?

GENOA, at 47¼.

If 47¼ Flor. — 100 L. N.
— Flor. 4769.50 ?

HAMBURG, at 35¼.

If 35½ Flor. — 40 Marks
— Flor. 4769.50 ?

LEGHORN, at 39¼.

If 39¼ Flor. — 100 L. T.
— Flor. 4769.50 ?

VIENNA, at 36¼.

If 36¼ N. Flor. — 30 A. Flor.
— N. F. 4769.50 ?

LISBON, at 43.

If 43 Flor. — 40 Crusados
— Flor. 4769.50 ?

Ex. 3. Exchange Banco Marks 5486 12 Sch. at HAMBURG,
with

PARIS, at 187¾.

If 100 Mks. — 187¾ Frs.
— Marks 5486 12?

GENOA, at 187¼.

If 100 Mks — 187¼ Lire
— Marks 5486 12?

AMSTERDAM, at 35¼.

If 40 Mks. — 35¼ Flor.
— Marks 5486 12?

LEGHORN, at 222.

If 100 Mks. — 222 Lire T.
— Marks 5486 12?

FRANKFORT, at 88½.

If 100 Mks. — 88½ Flor.
— Marks 5486 12?

BERLIN, at 153.

If 300 Mks — 153 Pruss. D.
— Marks 5486 12?

VIENNA, at 92¼.

If 100 Mks. — 92¼ Flor.
— Marks 5486 12?

PETERSBURG, at 34.

If 34 Schill. — 1 Ruble
— Marks 5486 12?

Ex. 4. Exchange Flor. 8128.00 Kr. S. D. W. at FRANKFORT,
with

PARIS, at 93⅝.

If 93⅝ Flor. — 200 Frs.
— Flor. 8128 ?

BREMEN, at 95¾.

If 95¾ Flor. — 50 R. D.
— Flor. 8128 ?

AMSTERDAM, at 98⅛.

If 98⅛ Flor. — 100 Flor.
— Flor. 8128 ?

HAMBURG, at 88.

If 88 Flor. — 100 Marks
— Flor. 8128?

N. B. The Formulæ for Milan and Legnorn are now similar
to Genoa.

Ex 5. Exchange 8000 Lire Nuove at ĠENOA, with

PARIS, at 99.	VIENNA, at 252.
If 99 Lire — 100 Francs — Lire 8000?	If 252 Lire — 100 Florins — Lire 8000?

AMSTERDAM, at 207.	LEGHORN, at 84.
If 207 Lire — 100 Florins — Lire 8000?	If 84 L. N. — 100 Lire T. — Lire 8000?

HAMBURG, at 182.	LISBON, at 610.
If 182 Lire — 100 Marks — Lire 8000?	If 610 Lire — 100 Milreis — Lire 8000?

PRODUCTS.

Ex. 1.	Flor.	6773 16 Cts.	Flor.	5601 55 Kr.
	Mks.	7650 10 Sch.	Lire	14279 94 Cent.
	Flor.	6669 34 Kr.	Lire	17075 71 Cent.
	Rub.	3534 37 Cop.	Lire	16772 59 Cent.

Ex. 2.	Frs.	9997 21 Cts.	Ducats	2384 75 Grani
	Flor.	4751 41 Kr.	Lire N.	10094 18 Cent.
	Mks.	5374 1 Sch.	Lire T.	12151 59 Cent.
	Flor.	3947 10 Kr.	Reis	1:774 697

Ex. 3.	Frs.	10301 37 Cts.	Lire N.	10273 94 Cent.
	Flor.	4835 20 Cts.	Lire T.	12180 58 Cent.
	Flor.	4855 46 Kr.	Pruss. D.	2798 7 Gros.
	Flor.	5061 31 Kr.	Rubles	2582 00 Cop.

Ex. 4.	Frs.	17456 11 Cts.	R. D.	4244 27 Grote
	Flor.	8283 31 Cts.	Mks	9236 6 Schill

Ex. 5.	Frs.	8080 81 Cts.	Flor.	3174 36 Kr.
	Flor.	3864 73 Cts.	Lire	9523 81 Cent.
	Mks.	4395 10 Sch.	Reis	1:311.475

INDIRECT EXCHANGES,

ARBITRATIONS OF EXCHANGE.

Indirect Exchanges are operations of exchange between two countries, through the medium either of one other country, or of several other countries, and the proportional rates of exchange deduced from them, are called Arbitrated Rates of Exchange.

Arbitrations of Exchange, or the calculations of arbitrated rates, are therefore either Simple or Compound.

SIMPLE ARBITRATIONS.

The Rate of Exchange produced by drafts or remittances between two places, is called a Simple Arbitrated Rate, when there is only one intermediate place employed in the operation; thus the rate of Exchange between London and Paris, obtained by the purchase in London of Bills upon Amsterdam, and by the sale of these Bills in Paris, is called a Simple Arbitrated Rate.

The object of the calculation of an Arbitrated Rate of Exchange, is to find whether it will produce a better rate, for either remitting or drawing, than is afforded by the direct rate ; and the object of the calculations of several rates, is to find which is the best for either of the same purposes.

In making these comparisons, in order to guide our operations, it is necessary for us to inquire,

1st—Whether the operation is, on the one hand, to be a remittance, or, on the other, to be a draft or return.

2ndly—Whether the variable price, or the rate of exchange, is in Foreign money or in Sterling.

Then we have to draw the following conclusions:

For remittances,

With a Foreign rate, any arbitrated rate is better than the direct rate, if it is greater than the direct rate.

With a Sterling rate, any arbitrated rate is better than the direct rate, if it is less than the direct rate.

Because, in either case, a given sum in Sterling will produce a greater sum in Foreign money, or a given sum in Foreign money will cost a less sum in Sterling.

For drafts or returns,

With a Foreign rate, any arbitrated rate is better which is less than the direct rate.

With a Sterling rate, any arbitrated rate is better which is greater than the direct rate.   •

Because we shall obtain, in either case, a greater sum in Sterling from a given sum that we draw for in Foreign money.

With inquiries of this nature is generally connected, a comparison between the direct rates of the two places concerned, for the purpose of determining, for either remittances or drafts, which place should make the operation.—Thus for remittances to Paris, or to create a fund in Paris, the direct rates are compared to determine whether we, in London, should remit to Paris, or whether our correspondents in Paris should draw upon us; and of course the reverse, if the remittance is to be made from Paris, or the fund is to be created in London.—In either case, and according to whether the variable price is in Foreign

money or Sterling, we must be guided by similar considerations
to the preceding ; namely, for remittances abroad to prefer that
mode which gives the greatest sum in Foreign money, or costs
the least sum in Sterling ; and for returns or remittances to this
Country, to prefer that which costs the least Foreign money, or
yields the greatest sum in Sterling.

For either direct operations, or for comparisons with the
arbitrated rates, the direct rates must be discounted or reduced
to Short Prices,* because, for the former purposes, the interest
for the time which the Bill has to run affects the price,†
operating contrary ways upon the rates in the two countries,
and, for the latter, the arbitrated rates are necessarily calcu-
lated for present money, as Bills are never sold on what may be
called credit : and it is here necessary also to observe, that in
making remittances of indirect Paper upon speculation, Bills at
a long date are preferable to those at a short date, because
more time is afforded, if it should be judged proper to wait for
an improvement in the rate of Exchange.

Bills at short dates are very seldom employed for other pur-
poses than direct remittances.

In order, therefore, to admit of a proper comparison between
the different sorts of Paper, the direct rates also at the two
places of operation should be taken at a long date, as 3 months,
and then discounted, either according to the rate charged by
the two houses of business, or at the market rate of discount.

To show how to apply this discount properly, we will take the
rates in a following example, page 95.

London on Paris at 3 months is quoted Fr. 25 55 Cents.
Paris on London at 3 months   —   Fr. 25 10

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* Short prices are the prices of Bills at sight, or at short sight, which is gene-
rally 3 days' sight.

† Any small differences is not in this country taken into consideration ; thus
a Bill at 90 days' date generally obtains as good a price as a Bill at 75 days' date ;
however, under equal circumstances in other respects, the latter Bill would ob-
tain a preference for remittances abroad, because it would there usually sell for
something more than the Bill at the longer date.

The discount for 3 months is there stated to be taken at 1 per Cent, or 25 Cents,* which is taken from the London rate, and added to the Paris rate, to make them Short or Cash rates; rendering the one Frs. 25 30 Cents, and the other Frs. 25 35 Cents.

The Interest is taken from the London rate, because if I send the Bill to Paris, and get it discounted there, the Interest will be deducted; but it is added to the Paris rate, because, if at Paris I want a Bill upon London at sight, I shall have more French money to pay for it than I should have to pay for a Bill at 3 months.

It is evident, that if the variable price is in Sterling, as the rate with Madrid, the allowance for Interest must be reversed, and must be added to the London price, and subtracted from the price abroad.

It now remains to exhibit the usual method of stating and working by the Chain Rule, or Rule of Equations, the arithmetical Questions of arbitrated rates.—The requisite data in these operations are, 1st, The fixed price of the rate between the two places, of which fixed price the arbitrated variable price is required. 2ndly, The buying price at the place where the operation commences. 3rdly, The selling price at the other place concerned; and, occasionally, there are intermediate or auxiliary rates required, to connect the prices, either with each other or with the fixed price, or to bring out the result in the proper money of the variable price.

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* To be very accurate, the time which the post takes between the two places should be deducted from the time which the Bill has to run.

The Interest is here reckoned at 4 per Cent per Annum, but perhaps the more usual rate is 5 per Cent per Annum; and it is to be noticed, that although the Interest for the difference of the time is, strictly speaking, the proper difference in the rates, as far as they are made subjects of calculation, yet in the actual negociation of Bills the difference is generally less, because Bills at sight are usually in less demand than Bills at a long date.

For the contractions that may be practised, and the method of finding and employing fixed numbers, see Tate's ' Counting-House Guide;' also for arbitrations of Merchandise, with *pro formâ* Invoices and Account Sales.

EXAMPLE 1.

From the following rates of Bills in London and Paris, it is required to find,

1st—Whether, having money to transmit from London to Paris, it will be better for me to remit direct Bills to Paris, or for my correspondents in Paris to draw upon me in London, allowing interest for the time the Bills have to run at 4 per Cent per Annum.

2ndly—Whether, having money to draw from Paris, it will be better for my correspondents to make me remittances, or for me to draw upon them.

3rdly—If I have to make remittances to Paris, whether any indirect rate will answer better than the rates of direct Bills.

4thly—If I have to obtain returns from Paris, whether any indirect rate will answer better than either of the direct rates.

RATES OF EXCHANGE.

London, June 17		Paris, June 14.
25 55 .	Paris at 3 months	
12 1¼ . .	Amsterdam . .	209¼
13 10¼ .	Hamburg . .	184
121 . .	Frankfort . . .	210⅛
30.20 . .	Leghorn . . ; .	83
	London at 3 months .	25.10

REDUCTION OF THE DIRECT RATES.

The Direct Paper being at 3 months, the Interest upon it, at 4 per Cent per Annum, is 1 per Cent, or to either rate about 25 Cents.

London on Paris — Fr 25 55 at 3 mo. — Fr 25.30 Short.
Paris on London — Fr 25.10 Do — Fr 25.35 Short.

WORK OF THE EQUATIONS.

AMSTERDAM.

$$1 \quad £?$$
$$1 \quad — \quad * \; 12 \quad 1\tfrac{1}{4} \; \text{Flor. St.}$$
$$100 \quad — \qquad 209\tfrac{1}{4} \; \text{Francs.}$$

Frs. $2,09\tfrac{1}{4} \times 12.06\tfrac{1}{4} = 25.24$ Francs.

HAMBURG.

$$1 \quad £?$$
$$1 \quad — \quad * \; 13 \quad 10\tfrac{1}{4} \; \text{Mks and Sc.} = 218\tfrac{1}{4} \; \text{Sc.}$$
$$\text{Sc. } 1600 = \text{Mks } 100 \quad — \quad * \; 184 \quad \text{Francs.}$$

Fr. $184 \times 218\tfrac{1}{4} \div 1600 = 25.10$ Francs.

FRANKFORT.

$$1 \quad £?$$
$$10 \quad — \quad 121 \quad \text{Florins.}$$
$$100 \quad — \quad 210\tfrac{1}{8} \; \text{Francs.}$$

$210\tfrac{1}{8} \times 121 \div 1000 = 25.42$ Francs.

LEGHORN.

$$1 \quad £?$$
$$1 \quad — \quad * \; 30.20 \quad \text{Lire Toscane.}$$
$$100 \quad — \quad * \quad 83 \quad \text{Francs.}$$

$83 \times 30.20 = 25 \cdot 06$ Francs.

COMPARISON OF THE ARBITRATED RATES.

	PRICE.		PARS.	
	London	Paris		
London 3 mo.	25 55	—	25.30	Short
Amsterdam	12 1¼	209¼	25 24	
Hamburg	13 10½	184	25 10	
Frankfort	121	210⅜	25.42	
Leghorn	30.20	83	25 06	
Paris 3 mo	—	25.10	25 35	Short

FOR DIRECT PAPER.

It appears from the direct rates between London and Paris, at 25.30 and 25.35, that

1st. To remit or transfer money from London to Paris, it is better for Paris to draw upon London at 25.35 Short, than for London to remit to Paris at 25.30 Short, because by the former operation there will be made 5 Cents per £, or about ⅕ per Cent more than by the latter.

2ndly. To have returns from Paris, or to remit or transfer money from Paris to London, it is better, by the same 5 Cents, for London to draw upon Paris, than for Paris to remit to London; because the Bills will cost so much less French money, or produce the same proportional part more in Sterling.

FOR INDIRECT PAPER

For remittances to Paris, or to create a fund in Paris, it appears, from the arbitrated results, that Bills upon Frankfort bought in London at 121 Flor. per 10 £ Sterling, and sold in Paris at 212½ Fr. per 100 Fl. will produce 12 Cents, or very nearly ½ per Cent* more than direct remittances from London to Paris ; or they will produce 7 Cents, which are about

* If 1-10th per Cent be deducted for extra brokerage, this and the following difference will be reduced to 4-10ths per Cent and 1-16th per Cent.

9—32 uds per Cent more than is yielded by direct drafts of Paris upon London.

For returns from Paris, or to create a fund in London, it appears, from the arbitrated results, that Bills on Leghorn bought in Paris at 83 Centimes per Lira T. and sold in London at L. T. 30.30 per £, will cost 29 Cents, or nearly 1½ per Cent less than direct Bills from Paris; and give a profit of 24 Cents, or nearly 1 per Cent more than will be obtained by Drafts from London on Paris

In this manner the investigation is conducted, when the Exchanges are tried for a speculation in Bills through intermediate places,* but to determine upon the propriety of making it, independent of the possible changes in the rates, it is necessary to take the charges into consideration.

The regular charges are, 1-10th per Cent for Brokerage upon each purchase or Sale—Stamps upon Drafts—and if the business is conducted by an Agent, one quarter, one third, or one half per Cent according to agreement, for Commission ; but it is not often that business to a great extent of this sort is done but between branches of the same house, or on joint account, the charge for Commission too much diminishing the small rate of profit which such operations commonly even at best afford The Interest of the money laid out is also to be taken into consideration, but the amount necessarily depends upon the promptness of the return

To elucidate the preceding calculations and remarks, we will examine the four following suppositions ;

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* It is to be noticed that it is common in speaking of operations with indirect Paper of any place, to say that the operation is made through that place ; as operations between London and Paris with Amsterdam Paper, are said to be through Amsterdam. However, to entirely coincide with this term, we must suppose that the fund which is to be created in Paris, is formed by our remitting direct Paper to Amsterdam, and either having the proceeds forwarded to Paris, or directing our correspondents in Paris to draw for them upon the Amsterdam House. Either this, or the supposition of the purchase and remittance of Amsterdam Bills to Paris, produces the same arbitrated rate, but the latter operation being less complicated is by far the more common, and it is also attended with fewer charges.

EXAMPLE 2.

DIRECT REMITTANCES AND DRAFTS.

£ 1000 remitted to Paris, in direct Bills,
    at 25.55 will produce . . . .   Francs 25550.00
If turned into Cash on arrival, there will be
    to deduct 3 months' Interest, which
    at 4 per Cent is 255.50

                         Net—Francs 25294.50

£ 1000 upon London sold in Paris at
    25.10 will produce . . . . .   Francs 25100.00
Add for the loss of 3 months' Interest be-
    fore the bills will be at maturity 251.00

                 Whole Expense . .   25351.00
(as above)   Net Proceeds . .   25294.50

                   Difference—Francs   56.50

Which difference upon 25000 Francs is about 9-40 ths per Cent.

If, therefore, I wish to create a fund in Paris, I shall obtain more by Paris drawing, than by my remitting.

On the other hand, if I wish to draw money from Paris, it will cost me less to procure £ 1000 by my drawing than by Paris remitting.

The Brokerage is either way the same, and therefore is not brought into the calculation.

EXAMPLE 3.

INDIRECT REMITTANCES.

£ 1000 laid out in London in Bills upon Frankfort at 121 Flor per 10 £ Sterling, and sold in Paris at 210½ Cts. per Florin, will produce at 25.42 . . . . Francs 25420.00

Deduct Brokerage 1 per 1000 . . . . 25.42

_____

Net 25394.58

Direct Bills, as before, will yield 25294.50

Difference—Francs 100.08

This difference upon 25000 Francs is 1-250 th, or 4-10 ths per Cent profit; including the charge for extra Brokerage, because direct bills have only one Brokerage, viz. on buying, but indirect bills have one Brokerage on buying and another on selling.

EXAMPLE 4.

INDIRECT RETURNS.

£ 1000 to be realized in London by Bills upon Leghorn bought in Paris at 83 Cts per Lira, and sold in London at 30.20 L. T. per £ Sterling, will require at 25.06 . . . Francs 25060.00

Add for extra Brokerage 25.06

25085.06

Direct Bills, as before, will require . . . 25351.00

Difference—Francs 265.94

Which profit upon 25000 Francs is about 1$\frac{1}{16}$ per Cent.

EXAMPLE 5.

INDIRECT REMITTANCES AND RETURNS.

£ 1000 laid out in London in Bills on Frankfort, will produce in Paris, as before, in Cash   .   .   .   Francs **25394.58**

This amount, deducting a further 1 per
  Mil. for Brokerage in Paris on buying
  returns **25.39**

Leaves   Net   Francs **25369.19**

This amount laid out in Paris in the purchase of Bills on Leghorn to be sold in London at the preceding rates, will produce at the arbitrated rate of 25.06 . . £ 1012 6 9

Deduct—Brokerage here on buying and
               selling 2 0 3
           Interest, 2 Weeks * 1 11 2
           Postages, &c. 15 4

Amount of Charges . .   4 6 9

Net £ 1008 0 0

£ 8 Profit on £ 1000 is 4-5 ths per Cent.

These examples form specimens of the most usual operations with arbitrated rates, but they admit of several variations where the Mercantile House has correspondents in different foreign places, by whom the negociations can be conducted.

Commission has not been charged upon these transactions, because they have been considered to be between different branches of the same establishment.—If otherwise, ¼, ⅓, or ½ per Cent, according to agreement, must either be deducted from the proceeds, or applied to the rates according as they are in Sterling or in Foreign money.

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* The supposed average lapse of time between paying for the Bills and receiving the money for the returns.

EXERCISES.

Ex. 1. What are the variations corresponding with $1\frac{1}{4}$ per Cent in the following rates ?

Paris	Frs	25 65 Cts.	Vienna	Flor.	10 5 Kr.
Amsterdam	Flor.	12 3 St.	Venice	Pence	$48\frac{1}{3}$
Hamburg	Mks	13 10 Sc.	Leghorn	Lire T.	30 50 C.
Berlin	Doll.	7 2 S. G.	Genoa	Lire	25 60 C.
Petersburg	Pence	$37\frac{3}{4}$	Madrid	Pence	50
Frankfort	Flor.	121	Lisbon	Pence	58

2. What rates per Cent do the following differences occasion ?

Paris	30	Cents	in Frs	25 55	Cents
Amsterdam	3	Stivers	— Flor.	12 3	Stiv.
Hamburg	$4\frac{1}{2}$	Schillings	— Mks	13 $10\frac{1}{2}$	Sch.
Berlin	4	Groschen	— Doll.	6 24	Gros.
Petersburg	$\frac{1}{2}$	d	— Pence	$37\frac{1}{2}$	
Frankfort	$1\frac{1}{2}$	Florins	— Flor.	120	
Vienna	10	Kreuzers	— Flor	10 5	Kreuz.
Venice	$22\frac{1}{2}$	Centisimi	— Lire	30 20	Cent.
Leghorn	28	ditto	— Lire	30 40	Cent.
Genoa	$37\frac{1}{2}$	Centisimi	— Lire	25 20	Cent.
Madrid	$\frac{1}{2}$	d	— Pence	$48\frac{1}{2}$	
Lisbon	$\frac{9}{16}$	d	— Pence	$56\frac{1}{4}$	

3. London on Paris at 3 months is 25.65 ; Paris on London at 3 months is 25.15—If 28 Cents be allowed for interest, what will be the net rates, and the per Centage difference ?

4. London on Amsterdam at 3 months is 12 2 ; Amsterdam on London is 11.95 ; If the rate of Interest in London is 5 per Cent, and in Amsterdam $2\frac{1}{2}$ per Cent, what will be the net rates, and the per Centage difference ?

5. London on Hamburg at 3 months is 13 $10\frac{1}{2}$; Hamburg on London at 2 months is 13 $8\frac{1}{4}$; If the rate of Interest in London is 5 per Cent, and in Hamburg $2\frac{1}{2}$ per Cent, what will be the net rates and the per Centage difference ?

Ex. 6. Find the arbitrated Rates of Exchange between London and Paris, from the following formulæ of Bills on

	AMSTERDAM.				LEGHORN.	
	1	£ ?			1	£ ?
1	—	*12.1	Fl. & S.	1	—	30.40	Lire.
100	—	*210¼	Francs.	100	—	84	Francs.

	HAMBURG.				GENOA.	
	1	£ ?			1	£ ?
1	-	*13.12	Mks. & S.	1	*25.35	Lire N.
100	-	*184¼	Francs.	100	100⅛	Francs.

	FRANKFORT.				NAPLES.	
	1	£ ?			240	Pence ?
10	—	121	Flor.		1	Ducat.
100	—	210	Francs.	100	—	*418	Francs.

	VIENNA.				MADRID.	
	1	£ ?			240	Pence ?
1	*10 1	Fl. & Kr.		—	1	Duro.
100	*254	Francs.		—	5.15	Francs.

The rates for direct bills at 3 months being at London **25.60** and Paris 25.12¼,

It is required to find,

1st—For direct Paper, whether it is better for London to remit to Paris, or for Paris to draw on London,

2ndly—For remittances to Paris, and

3rdly—For returns from Paris,

Whether any indirect Paper affords a better rate than direct Paper, and what is the per Centage difference ?

Ex. 7. Find the arbitrated Rates of Exchange between London and Amsterdam, from the following formulæ of Bills on

PARIS.					LEGHORN.		
		1	£?			1	£?
1	—	*25.60	Francs.	1		30.30	Lire T.
120	—	*57¼	Florins.	100		39¾	Florins.

HAMBURG.					GENOA.		
		1	£?			1	£?
1	—	*13 12	Mks. & S.	1	*25-35		Lire.
40	—	*35	Florins.	100	*47¼		Florins.

FRANKFORT.					NAPLES.		
		1	£?			240	Pence?
10	—	121	Florins.	40⅓*	—	1	Ducat.
100	—	100¼	N. Flor.	40	—	*79¾	Florins.

VIENNA.					MADRID.		
		1	£?			240	Pence?
1	*10	1	Fl. & Kr.	49¾		1	Duro.
30	*36⅙		Florins.	1		2.44	Florins.

The rates for direct bills at 3 months being, at London 12 1¾, and at Amsterdam 11.90.

It is required to find

1st—For direct Paper, whether it is better for London to remit to Amsterdam, or for Amsterdam to draw on London,

2ndly—For remittances to Amsterdam, and

3rdly—For returns from Amsterdam,

Whether any indirect Paper affords a better rate than direct Paper, and what is the per Centage difference?

Ex. 8 Find the arbitrated Rates of Exchangé between London and Hamburg, from the following formulæ of Bills on

PARIS.				LEGHORN.	
	1	£ ?		1	£ ?
1	*25.60	Francs.	1 —	30.30	Lire.
187*	100	Marks.	222½ —	100	Marks.

AMSTERDAM.			◆	GENOA.	
	1	£ ?		1	£ ?
1 — 12	1¾	Fl. & St.	1	*25.35	Lire.
35.40 —	40	Marks.	185¼*	100	Marks.

FRANKFORT.				LISBON.	
	1	£ ?		240	Pence?
10 —	121½	Florins.	53*	1000	Reis.
88½ —	100	Marks.	1000	*48¼	Schill.
			16	1	Mark.

VIENNA.				MADRID.	
	1	£ ?		240	Pence?
1 —	12 30	Fl & Kr	50 —	1	Duro.
94 —	100	Marks.	1 —	44	Schill.
			16 —	1	Mark.

The rates for direct Bills at 3 months being at London 13 12 and at Hamburg 13 8¼,

It is required to find,

1st—For direct Paper, whether it is better for London to remit, or Hamburg to draw. •

2ndly—For remittances to Hamburg, and

3rdly—For returns from Hamburg,

Whether any indirect Paper affords a better rate than direct Paper, and what is the per Centage difference.

Ex. 9. If I remit £ 1000 in Paper to Paris at 25.55 at 3 months, and it is discounted at 5 per Cent for 86 days, what net credit shall I receive ?

10. If I buy a Bill in London on Rotterdam for Florins 5000 at 12 1½, and sending it to Paris it is negociated there at 209, what net credit shall I receive ; allowing Brokerage 1-10 th per Cent, and Commission 1-3 rd per Cent; and what rate of Exchange will be established between London and Paris, allowing a Brokerage upon the Purchase here of 1-10 th per Cent?

11. If I buy a Bill for Francs 10.000 in London at 25.50, and send it to Amsterdam and get it negociated there at 57½, what net credit shall I receive, and what rate of Exchange will be established, supposing the rate of the charges to be the same as before ?

12. If I invest £ 1000 in Bills upon Hamburg at 13 12¼, and I send them to Amsterdam to be sold there, what will be the net proceeds, supposing the selling price to be 35⅜, and the whole charges on the sale to be ½ per Cent ? And what profit or loss per Cent shall I make by this operation, if I have Bills in return at 2 months' date at 11.90 ; deducting charges on the purchase at Amsterdam ⅓ per Cent, and allowing for Brokerage in London 1 per 1000, besides Interest for 67 days at 5 per Cent per Annum ?

PRODUCTS.

Ex. 1.	Paris	32.06	Cts	Vienna	7.56¼	Kr.
	Amsterdam	15.18¾	Cts	Venice	2 4¼	4ths
	Hamburg	2.72½	Sc.	Leghorn	38.12½	Cent.
	Berlin	2.65	Gr.	Genoa	32.—	Cent.
	Petersburg	15-32nds		Madrid	2.5	4 ths
	Frankfort	1½	Flor.	Lisbon	2.9	4 ths

PRODUCTS CONTINUED.

Ex. 2. Paris   1.17 per Cent.   Vienna   1.65 per Cent.
       Amsterdam 1.23   —   Venice   0.74
       Hamburg   2.05   —   Leghorn   0.92
       Berlin   1.96   —   Genoa   1.48
       Petersburg 1.33 —   Madrid   1.03
       Frankfort 1.25   —   Lisbon   1 00

3. London Net 25.37   Paris   Net 25.43   —Diff. $\frac{1}{4}$ per Ct.

4. London — 11 19   Amsterdam — 12.02$\frac{1}{2}$ — $\frac{5}{8}$ —

5. London — 13 7$\frac{3}{4}$ Hamburg — 13 9$\frac{1}{8}$ — $\frac{11}{18}$ —

6. Net direct rates   London   25 34.4 — Paris 25 37.6
   Indirect rates Amsterdam 25 33.5 Cts.
                   Hamburg   25 33.4
                   Frankfort 25 41.0
                   Vienna   25 44.2
                   Leghorn   25 53.6
                   Genoa   25 38.1
                   Naples   25 00.1
                   Madrid   24 96.9

For direct Bills, Paris should draw — Difference, 1-8 th per Ct.
— Indirect remittances, Leghorn is 19 Cts. or $\frac{3}{4}$ per Ct. better.
— Indirect returns,   Madrid is 37.8 — 1$\frac{1}{2}$ per Ct. better.

7. Net direct rates London   11 96.6 Amsterdam 12 01.9
   Indirect rates Paris   12 21.3
                   Hamburg   12 03.1
                   Frankfort 12 13.0
                   Vienna   12 06.1
                   Leghorn   12 04.4
                   Genoa   12 04.1
                   Naples   11 92.5
                   Madrid   11 77.0

Ex. 7. Continued.—For direct Bills, Amsterdam should draw
Difference 7-16ths per Cent.
—Indirect remittances, Paris is 24,7 Cts. or 2 per Ct. better.
—Indirect returns, Madrid is 24,9 ——— 2 per Ct. better.

8. Net direct rates	London	13	9.8	Hamburg 13	10.4
Indirect rates	Paris	13	11.0		
	Amsterdam	13	10.5		
	Frankfort	13	11.7		
	Vienna	13	03.8		
	Leghorn	13	9.8		
	Genoa	13	10.9		
	Lisbon	13	10.4		
	Madrid	13	03.1		

For direct Bills, Hamburg should draw. Diff. 3-11ths per Ct.
—Indirect remitt. Frankfort is 2 Sch. or $\frac{4}{9}$ per Ct. better.
—Indirect returns Madrid is 3.1 Sch. or 1$\frac{4}{5}$ per Ct. better.

9. Net Credit—Francs   25244 82 Cents.

10. Cost in London £ 414   9 10—Net Proceeds in Paris.
   Francs   10404.72 — Rate of Exchange.   Francs   25.10.2

11. Cost in London £ 392 11   0 Net Proceeds in Amsterdam.
   Florins 4770.91 — Rate of Exch. Flor. 12 15 Cts. or 3 Stiv.

12.	Amount of the Bill	Bco Mks	13765	10	Sch.
	Proceeds in Amsterdam	Florins	12173	97	Cts.
	Net amount of returns	Florins	12052	54	Cts.
	Net amount in Sterling	£	1012	16	4
	Interest and Brokerage		10	6	0

Profit—£ 2 10 4 or $\frac{1}{4}$ per Cent.

* N. B. 360 days are generally reckoned 1 Year, in calculations of this
nature.

COMPOUND ARBITRATIONS.

The rate of exchange between two places, produced by remittances through an intermediate place, in any other than direct Paper of that place, is called a compound arbitrated rate.

Thus, as has before been stated, if Bills upon Amsterdam are sent from London to Amsterdam, and the proceeds are sent to Paris in direct Bills, the rate thus effected between London and Paris is called a simple arbitrated rate ; but in such remittances through Amsterdam, if Hamburg Bills are sent either from London to Amsterdam, or from Amsterdam to Paris, the rate thus produced between London and Paris, is called a compound arbitrated rate.

Operations of this nature are also called circuitous, when either more than three places are concerned, or, more properly, when the proceeds of the Bills, after having passed through two or more other places, return to the original place ; but the houses capable of thus extending their negociations, are so few, and the liability to unfavourable changes becomes so much increased, that in the practice of exchanges they are of very limited occurrence.

The calculations of compound rates are, like those of simple arbitrations, usually performed by the Chain Rule ; for remittances, the first of the principal rates is the buying price at the place where the operation commences; the next, the selling price at the intermediate place if direct Bills are not used ; the next, the buying price of either direct or indirect Bills ; and, lastly, the selling price at the place where the operation terminates if it receives indirect Bills.

Example 1.

LONDON AND PARIS.

Direct Bills from London   Direct from Amsterdam.

If I buy a bill upon Amsterdam at 12 Flor. 2 St. per £ Sterling and send it to Amsterdam, and the proceeds are forwarded to Paris at 57½ Florins per 120 Francs, what proportional exchange does this remittance establish between London and Paris?

```
                          1   £   ?
        1     —   *  12  10   Flor. and Cents.
   Flor. 57½  *  —          120   Francs.
                     12.10
                    ———————
        57½         1452.00

       115    )     2904.00  ( 25.25
                     604
                     290
                     600
```

Result—Francs 25 25 Cents.

This is properly only a simple arbitration, and it is introduced here merely because it shows the same routine of the operation with direct Bills, as the three following do with indirect Bills.

Instead of forwarding the proceeds from Amsterdam to Paris, the same result, independent of charges, will come out by Paris drawing upon Amsterdam on the credit of the fund created there.

EXAMPLE 2.

LONDON AND PARIS.

Indirect from London   Direct from Amsterdam.

If I buy a bill upon Hamburg at Mks 13 10½ Sc. per £ Sterling, and I send it to Amsterdam, and it is sold there at 35½ Florins per 40 Banco Marks ; and if the proceeds are re-mitted to Paris in French Bills at 57½ Florins per 120 Francs, what price does this transaction establish between London and Paris ?

				1	£	?	
	£	1	—	*	13	10½	= 218½ Sch.
Sch. 640	=	Mks 40	—		*	35½	Florins.
		57½ *	—			120	Francs.
						35½	

640		4260
4480		76680
3200		8520
320		2130
368.00	)	9308.10 (25.29
		1948
		1081
		3450

Result—Francs   25 29 Cents.

The first rate, here, is the buying price in London, the second is the selling price at Amsterdam, and the third and last is the buying price of French Bills at the same place, the remittance thence being made to Paris in direct Bills.

N. B. This calculation may be made as in Ex. 4, page 165, without reducing the Marks into Schillings.

EXAMPLE 3.

LONDON AND PARIS.

Direct from London   Indirect from Amsterdam.

If I buy a Bill upon Amsterdam at 12 2, and it is forwarded
to Amsterdam, and the proceeds are laid out in Bills upon Ham-
burgh at 35½, which are forwarded to Paris, and sold there at
185 Francs per 100 Marks Banco, what rate does this opera-
tion establish between London and Paris ?

			1	£ ?	
1	—	*	12 10	Flor. and Cts.	
35½ *	—		40	Bco Mks	
1.00	—	*	1.85	Francs.	
			40		
			74.00		
			12.1		
			7400		
			888		
35½			895.400		
2			2		
71	)		1790.800	(25.22	
			370		
			158		
			160		

Result—Francs 25   22 Cents.

The buying price in London is the first rate, the buying price
at Amsterdam the second rate, and the selling price at Paris
the third rate.

Example 4.

LONDON AND PARIS.

Indirect from London   Indirect from Amsterdam

If I buy a Bill upon Hamburg at 13 10½, and it is sold in Amsterdam at 35; if also the proceeds are there laid out in Bills upon Genoa at 46½ Florins per 100 Lire, and these Bills are sold in Paris at 1 per Cent Discount, what rate does this operation establish between London and Paris?

		1	£ ?	
1	*	13	10½	Mks and Sch.
40		*	35	Florins.
46½	*		100	Lire.
100		*	99	Francs.

	3500
	13

	45500	
	1750	for 8
46½	437.5	— 2
40	109.37	— ½
1860	47796.87	(25 69
	1059	
	1296	
	808	

	Fr.	C.	
	25	69	
Discount		25	1 per Ct.
Result—Francs	25	44	Cents.

EXAMPLE 5.

CIRCUITOUS EXCHANGE.

LONDON, PARIS, AND MADRID.

Suppose I buy Bills upon Hamburg at 13 10½, and they are sold in Amsterdam at 35; that the proceeds are invested in Bills upon Genoa at 46½, and that these Bills are transmitted to Paris and sold at 1 per Cent. Discount; and lastly, that the proceeds are laid out in the purchase of Bills upon Madrid at 5 Frs 17 Cts per Hard Dollar, and that these Bills are transmitted to me and sold at 50 d per Dollar.

What Profit or Loss per Cent would this Circuitous Exchange produce, independent of the Charges?

$$
\begin{array}{rcll}
& & 100 & £\ ? \\
1 & - & 13\ 10\frac{1}{2} = & 218\frac{1}{2}\ \text{Sch.} \\
\text{Sch. } 640 = \text{Mks } 40 & - & 35 & \text{Florins.} \\
46\frac{1}{2} & - & 100 & \text{Lire.} \\
100 & --- & 99 & \text{Francs.} \\
5.17 & - & 1 & \text{Duro.} \\
1 & - & 50 & \text{Pence.} \\
240 & - & 1 & £\ \text{Sterling.}
\end{array}
$$

$$
\frac{218\frac{1}{2} \times 35 \times 99 \times 50}{64 \times 46\frac{1}{2} \times 5.17 \times 24} \qquad £\ 102.516
$$

Result £ 102 10 4

Profit £ 2 10 3 per Ct

To form a proper estimate of the Profit or Loss upon these exchange transactions, the charges must be applied thus:

To the first rate	Fr	25.24		
Double Brokerage — 2 per 1000 . .	Cts	5		
One Commission — say ¼ per Cent . . .	6	. 11		
	Net	Fr	25.13	

To the second rate	Fr	25.29
3 Brokerages — 3 per 1000 . . . . Cts	7½		
Double Commission — ½ per Cent . .	12½	. 20	
	Net	Fr	25.09

To the third rate	Fr	25.22
3 Brokerages and double Commission	20	
	Net	Fr 25 02

To the fourth rate	Fr	25.44
4 Brokerages — 4 per 1000 . . . Cts	10		
4 Commissions — 1 per Cent	25	. 35	
	Net	Fr	25.09

The last calculation for finding the Profit per Cent, requires correction in the following manner:

Arbitrated Profit per Cent. . . .	£ 2	10	4
6 Brokerages — 2 at each place . £ 0 12 0			
4 Commissions at ¼ per Cent each . . 1 0 0			
Interest for 3 weeks, postages, &c. . . . 7 3	1	19	4
Net Profit per Cent £ 0	11	0	

In each arbitration, there is one brokerage to be deducted on each purchase, and one on each sale.—There is also a Commission, here reckoned at ¼ per Cent, upon each sale and upon each purchase, at Amsterdam and Paris.

If the houses abroad are connected with the London House, the commissions will be saved, or rather divided, and the speculation will be so much the more advantageous: but it is seldom that any great per Centage profit can be made by such transactions, unless by unexpected improvements in the rates of exchange.

REMARKS ON THE APPLICATION OF PER CENTAGE CHARGES.

In the calculation of the charges on exchange operations, distinctions are sometimes made, as to whether the per Centages are to be reckoned upon the given amount, or upon that which is produced by the addition or subtraction of the per Centage amounts.

Thus supposing the charges to be 3 per Cent, and the given amount £ 1000, a distinction is made as to whether the proportional statement should be in this form.

If £ 100 produce £ } or } what will £ 1000 produce ?
(97)

To which the product will be £ 1030 or £ 970; or in this form

If £ { 97 } produce £ 100 what will £ 1000 produce ?
{ or }

To which the product will be nearly £ 1030 18 7, or £ 970 17 6 ; the former two products making the differences, each £ 30, to be 3 per Cent on the given amount £ 1000, and the latter two products making the differences, £ 30 18 7 and £ 29 2 6, to be 3 per Cent on their amounts £ 1030 18 7 and £ 970 17 6.

But in the finding of an arbitrated Rate of Exchange, it is but very seldom that these distinctions are necessary, because the amounts both of the Rates and Charges are too small to make the difference of any consequence. When otherwise, instead of working the Proportion, a correction may be made upon the first per Centage amount, by adding or subtracting the same per Centage upon that amount.

Thus to apply so much even as 3 per Cent to one of the largest rates with London, as the rate with France at 25.60

3 per Cent upon 25.60 is .	.	76.8 Cents.
correction—3 per Cent upon 76 Cents is	.	2.2
making by addition . .	.	79.0
or, by subtraction . .	.	74.6

If therefore 3 per Cent is to be calculated upon the total, as in the 1 st form 97 to 100, we shall obtain the result thus :

Net rate .	.	25.60
Add . .	.	.79
Full rate .	.	26.39

Which is the same as is produced by working the proportion ; for 97 is to 100, as 25.60 to 26.39 ; or in other terms 3 per Cent on 26.39, which is to be found, is 79 Cents.

On the other hand, 3 per Cent in the 2nd form 103 to 100, is found by subtraction : thus,

Full rate .	.	25.60
Subtract .	.	
Net rate .	.	24.

Which is the same as is produced by working the proportion, for 103 is to 100 as 25.60 to $24.85\frac{4}{10}$; or 3 per Cent on 24.85 is very nearly $74\frac{6}{10}$ Cents.

If the rate of the per Centage is less, the correction becomes of less consequence, and may usually be disregarded.

It must further be observed, that in exchange circulations the charges are, in practice, calculated at each step ; but this precision in finding an arbitrated rate, is wholly unnecessary.

We shall conclude this subject by showing the routine of the last supposition, Example 5.

ROUTINE OF THE CIRCUITOUS ARBITRATED RATE.

£ 1000 laid out in London in Bills on Hamburg at 13 10½ produce . . Banco Mks 13656 4 Sc.

These Bills transmitted to Amsterdam and sold
at 35 Flor per 40 Marks produce . . . Florins 11949.22
deduct, Brokerage for selling Hamburg
Bills and buying Genoa Bills . . . Flor 23.89
Two Commissions each ½ per Cent . . 59.75
Postages, &c. 3.58   87.22

               Net proceeds . Florins 11862. 0

This amount laid out in Bills on Genoa
at 46½ Flor per 100 Lire produces Lire 25509 67 Cent.

These Bills sold in Paris at
1 per Cent Discount produce . . . . Francs 25254.58
deduct, Brokerage for selling Bills on Genoa,
and buying Bills on Madrid . . . Frs 50.50
Two Commissions each ½ per Cent . 126.27
Postages, &c. 7.23   184.00

               Net proceeds . Francs 25070.58

This amount laid out in Bills on Madrid,
at Fr 5.17 per Duro produces D 4849 5

These Bills sold in London at 50 d
per Dollar, produce on Sterling . . . . £ 1010 5 2
deduct Brokerage for buying Hamburg
Bills and selling Spanish Bills . . £ 2 0 0
Interest, 3 weeks on £ 1000 at 4 per Ct. 2 6 2
Postages, &c. 9 0   4 15 2

            Net profits . . £ 5 10 0

£ 5 10 s upon 1000 are 11-20 ths per Cent.
The estimate in p. 167 gives the same result.

Exercises.

What Proportional Exchange is established between,

Ex. 1. London and Paris by Bills upon Amsterdam, bought in London at 12 1½; the proceeds having been forwarded from Amsterdam to Paris, in direct Bills at 56¼ Florins per 120 Francs ?

2. London and Paris by Bills upon Hamburg, bought in London at 13 11¾, and sold in Amsterdam at 35½ Florins per 40 Marks, the proceeds having been forwarded to Paris, in direct Bills at 56½ Florins per 120 Francs ?

3. London and Paris by Bills upon Amsterdam, bought in London at 12 1½; the amount having been forwarded from Amsterdam to Paris in Bills upon Hamburg, which Bills were bought in Amsterdam at 35½ Flor. per 40 Banco Marks, and sold in Paris at 186½ Francs per 100 Marks ?

4. London and Paris by Bills upon Hamburg, bought in London at 13 11¾, and sold in Amsterdam at 35½ Florins per 40 Marks Banco; the proceeds having been invested in Bills upon Genoa at the rate of 46¾ Flor. per 100 Lire, which Bills were sold in Paris at ⅜ per Cent Premium ?

5. London and Hamburg, by Bills upon Frankfort bought in London at 121, and remitted to Paris and sold at 2 12½ Francs per Florin, the proceeds being forwarded to Hamburg, in direct Bills at 186½ Francs per 100 Marks Banco ?

6. London and Amsterdam, by Bills upon Vienna bought in London at 10 2, and remitted to Paris and sold there at 253½ Francs per 100 Florins; the proceeds having been remitted to Amsterdam in Bills upon Frankfort, which were bought in Paris at 2.13 Francs per Florin 24 G. f, these Bills having been sold in Amsterdam at 99 Florins per 100 Z. V. Florins ?

Ex. 7. London and Frankfort by Bills upon Hamburg, which were bought in London at 13 11¾, and having been remitted to Amsterdam were sold there at 35½ Florins per 40 Marks Banco; the proceeds having been forwarded to Frankfort in Bills upon Augsburg, which were bought in Amsterdam at 36 Netherland Florins per 30 Florins of Augsburg, and sold in Frankfort at 120 Florins per 100 Florins of Augsburg.—The charges being at Amsterdam, ½ and 2-10ths per Cent for Commission and Brokerage, and for the same at Frankfort 1-3rd and 1-10th per Cent; besides interest from the 28th of September to the 12th October at 5 per Cent per Annum?

8. London and Frankfort by Bills upon Paris, which were bought in London at 25.65 and sold in Amsterdam at 56½; the proceeds having been invested in Bills upon Genoa bought at 47, and sold in Hamburg at 186; and the proceeds having thence been transmitted to Frankfort in Bills upon Berlin bought at 152½, and sold in Frankfort at 106—The charges being 3 Commissions at 1-3rd per Cent each, and 5 Brokerages at 1-10th per Cent each, besides Interest for 20 days at 4 per Cent per Annum?

PRODUCTS.

Ex. 1. Fr. 25.64 $\frac{6}{10}$ Ex. 2. Fr. 25 88 $\frac{8}{10}$ Ex. 3. Fr. 25.37 $\frac{4}{10}$

4. Fr. 26.23 $\frac{5}{10}$ 5. Mks 13 12½ Sc.   6. Fl. 12.04 $\frac{2}{10}$

7. Rate without deduction   .   .   Florins   121.892

    Allowance for charges at Amsterdam —   .853

      Do   Do   at Frankfort   —   .524

    Interest .   .   .   .   —   .233

               Net Rate   —   120.282

8. Rate without deduction   .   .   Florins   124.064

    Allowance for Commiss. and Brok.   —   1.861

    Interest .   .   .   .   —   .376

               Net Rate   —   121.827

BANKING OPERATIONS,

THE COMPARISONS OF RATES OF EXCHANGE

ON

DIFFERENT PLACES.

In the execution of orders for Remittances or Drafts, it is common for limited prices of Bills on different places to be given to the correspondent, to guide him in the choice of the Paper which he should purchase or sell for his principal ; and if, as is very common, the limits of the orders and the present prices do not agree, it becomes necessary to compare the given rates with the present rates, in order to determine whether the order should be executed, or amongst several rates, which should be preferred.

The principles upon which these comparisons are founded, are the same as those before explained ; viz. that

For Remittances—That rate is the best of which the variable price is the highest in Foreign money, or the lowest in the money of the place making the operation ; and that

For Drafts—That rate is the best of which the variable price is lowest in Foreign money, or the highest in the money of the place making the operation.

The comparisons being here however made between rates on different places, and not between arbitrated rates upon the same place, different formulæ are required to be employed, the application of which is facilitated by use of the following letters or symbols.

Fixing the place of operation at London, the money of which is Sterling, we use

    S to signify a Sterling Rate, as that on Madrid.
    F . . . . Foreign Rate, ... Paris.
    g . . . . . . the given price, or limit of the order.
    p . . . . . . the present price, or that at which the order can be executed.

Then for the purpose of affording the means of comparing rates in different monies, and with different fixed prices, it becomes necessary to express them fractionally; that is, to compare them as abstract numbers with unity; in the performance of which we are directed, by the well known arithmetical rule, that, the other term of a fraction remaining fixed, the fraction increases as either the numerator increases, or the denominator decreases; and that the fraction decreases when the reverse takes place.

Applying these symbols to the preceding principles, upon which the comparisons are stated to be founded, viz, that

For Remittances with Foreign rates (F), the greater p becomes with respect to g, or, with Sterling rates (S), the less p becomes with respect to g, the more the rate improves—and, on the other hand,

For Drafts, with Foreign rates (F), the less p becomes in comparison with g, or, with Sterling rates (S), the greater p becomes in comparison with g, the more the rate improves.

And employing also the fractional forms, we have these formulæ :

FOR REMITTANCES

$$\text{With } \begin{Bmatrix} F \\ \\ S \end{Bmatrix} \text{ Rates, the rate improves as } \begin{Bmatrix} \dfrac{p}{g} \\ \dfrac{g}{p} \end{Bmatrix} \text{ increases}$$

FOR DRAFTS.

$$\text{With } \begin{Bmatrix} \\ \\ \end{Bmatrix} \text{ Rates, the rate improves as } \begin{Bmatrix} \dfrac{g}{p} \\ \dfrac{p}{g} \end{Bmatrix} \text{ increases}$$

For comparing the results of these formulæ, it is generally better to reduce the fractions into decimals, as the greatest result can then be more easily perceived ; and in comparing the fractions for Remittances with those for Drafts, to find whether a gain in the one compensates for a loss in the other, it is

generally sufficient to find whether the excess above unity of the one, is equal or superior to the deficiency below unity in the other, though perfect accuracy would require the product of the fractions to be taken, and compared with unity.

We shall now show the application of these formulæ to the most usual operations; dividing them into two portions; viz. 1 st, the comparison of the given and present rates for Remittances and Drafts, both separately and together, with Sterling and Foreign rates; and, 2 ndly, the finding of an equivalent present rate, when only one of the present rates is given.

N. B. In the practice of these comparisons, it is usual to employ the terms, Cash and Bills, instead of Remittances and Drafts; thus, as the Rate on Paris increases, it is said to be better for Cash, or the laying out of money, and worse for Bills, or for drawing: while, on the reverse, as this Rate decreases, it is worse for Cash and better for Bills.

On the Continent it is usual to character the Courses of Exchange with the same or similar terms; as, *Argent, Papier, Geld, Briefe*; or *Denaro, Lettera*, &c. the Cash rates being those at which Bills were bought of the Bankers, and the Bill rates those at which they were sold by the same parties; and the same terms are also employed to denote the state of the Bill Market, when the rates are expressed in only one or the other Column; Cash then signifies that Bills are in demand, and Paper that the supply is greater than the demand.

Example 1.

ORDER FOR REMITTANCES.

I have an order to execute from Frankfort, for Bills either upon Hamburg at 13 10, upon Amsterdam at 12 1, upon Paris at 25.60, or upon Lisbon at 53, or in the Paper that best agrees with these prices.—On the present exchange-day the prices of these Bills are, Hamburg 13 9½ — Amsterdam 12 0 — Paris 25.50—and Lisbon 53½—Which Paper is the best for me to remit ?

$$\text{F Hamburg.} \quad \frac{p}{g} \quad \frac{13\frac{10}{32}}{13\frac{10}{8}} = \frac{435}{436} = 0.997\tfrac{1}{2}$$

$$\text{F. Amsterdam.} \quad \frac{p}{g} \quad \frac{12}{12\frac{1}{20}} = \frac{240}{241} = 0.995$$

$$\text{F. Paris.} \quad \frac{p}{g} \quad \frac{25.50}{25.60} = \quad 0.996 \quad .$$

$$\text{S. Lisbon} \quad \frac{g}{p} \quad \frac{53}{53\frac{1}{2}} = \frac{106}{107} = 0.990$$

The best of these Papers is that upon Hamburg, which is 2½ per 1000, or ¼ per Ct. less than the limited given price. Paris Paper is the next in value, and the worst is that upon Lisbon.

When the differences in the respective values are not so minute, as to require the trouble of valuing the fractions in order to find out which is the best, they may be calculated thus:

Hamburg	13 10	and	13 9½	diff. ½ Sch. or	¼ per Ct.
Amsterdam	12 1	—	12 0̄	— 1 Stiv. —	42-100 ths
Paris	25.60	—	25.50	— 10 Cts —	39-100 ths
Lisbon	53	—	53½	— ½ d —	1 per Ct.

EXAMPLE 2.

ORDER FOR DRAFTS.

I have an order from Frankfort to draw upon either of the following places, at the following rates, or the best that the changes in the course may allow; viz. Hamburg at 13 12, Amsterdam at 12 0, Paris at 25.40, or Lisbon at 52½, and the prices of Bills in London now are, on Hamburg 13 13¼, Amsterdam 12 2, Paris 25.50, and Lisbon 52¼. Upon which place should I draw in conformity with my instructions ?

$$\text{F} \quad \text{Hamburg.} \quad \frac{-}{p} \quad \frac{--}{13\frac{?}{4}} = \frac{---}{885} = 0\ 994$$

$$\text{F.} \quad \text{Amsterdam.} \quad \frac{g}{p} \quad \frac{12}{12\frac{1}{16}} = \frac{120}{121} = 0.991$$

$$\text{F.} \quad \text{Paris.} \quad \frac{g}{p} \quad \frac{25.40}{25\ 50} = \quad 0\ 996$$

$$\text{S} \quad \text{Lisbon.} \quad \frac{p}{g} \quad \frac{52\frac{1}{4}}{52\frac{1}{2}} \quad \frac{200}{210}$$

Answer, on Paris.

All the rates having fallen they have become worse for drawing, but that on Paris less so than the others.

N. B. It is evident in this fractional arrangement of the prices, in both this and the last operation, that if either result is greater than unity, that rate has improved beyond the given limit for either purpose, and that if more than one rate has improved, that rate is to be taken which has improved the most.

EXAMPLE 3.

~~~~~~~~

ORDER FOR REMITTANCES AND DRAFTS.

I have an order from Hamburg to remit Bills on Amsterdam at 12 2, and to draw upon Paris at 25.45, or at equivalent rates.—The present rates are 12 2½ on Amsterdam, and 25.50 on Paris, should I execute the order?

$$\text{F. Amsterdam Remit} \quad \frac{p}{—} \quad \frac{12\frac{5}{10}}{———} \; = \; \frac{^{\cdot}\;485}{484} \; = \; 1.002$$

$$\text{F. Paris} \qquad \text{Draw} \quad \frac{g}{p} \quad \frac{25.45}{25.50} \; = \; \frac{509}{510} \; = \; 0.998$$

It here appears that the betterness of the fraction for the Remittance, is equal to the worseness of that for the Draft, and therefore the order may be executed.

If more exactness is requisite, the decimals may be extended, as to 1.00206 and 0.99804* and they then show, that the alterations taken together make the transaction more favourable than the limits of the order.

But the same may be perceived by the fractions alone, for the difference of the first from unity is 1-484 th, and that of the second 1-510 th, and therefore as the former is greater than the latter, the Remittance and Draft may be executed with advantage.

---

* It has been remarked, that precision may require the fractions or their values to be multiplied together, thus

$$1.00206 \; \times \; 0.99804 \; = \; 1.000095 \; \&c.$$

but in this example the product is very nearly the same as the sum of the two fractions.

Example 4.

ORDER FOR REMITTANCES AND DRAFTS.

1 am ordered by my correspondent in Paris to remit him Paper on Hamburg at 13 11½, and to reimburse myself by drawing on Lisbon at 53.—The rates here being on Hamburg 13 11, and on Lisbon at 53¼, should I execute the order?

Mks 13 11½ = 219½ Sch.   Mks 13 11 = 219 Sch.

F. Hamburg   Remit $\dfrac{p}{-}$ $\dfrac{219}{-}$ =   0.997¾

S. Lisbon   Draw $\dfrac{p}{g}$ $\dfrac{53¼}{53}$ =   1.004₁₀

The rate for Drafts appears to have improved more than the rate for Remittances has deteriorated, and it will therefore be proper to execute the order.

The same may be found from per-centaging the differences in the rates; thus, the Hamburg difference, ½ Sch. Banco, is 2-9 ths per Cent Worse; and the Lisbon difference, ¼ d Sterling, is ½ per Cent Better, and consequently the improvement is greater than the deterioration.

It is evident, in any case, that if the improvement is less than the deterioration, the order should not be executed.

TO FIND EQUIVALENT RATES.

When there are limitations in the prices of compound orders, or those for drawing or remitting, it is frequently necessary, from comparing one of the present rates with its correspondent given rate, to find the other equivalent rate, which may be done by the following directions :

Arrange the fractional form of the two sets of prices according, as before, to whether the rate at London is in Foreign money or Sterling, leaving that term blank * which is required ; then,

If a numerator is wanting, multiply the denominators together, and divide the product by the single numerator ; or

If a denominator is wanting, multiply the numerators together, and divide the product by the single denominator.

Example 1.

I have orders to remit upon Paris at 25.60, and to draw upon Amsterdam at 12 2. The rate upon Paris has fallen to 25 50, at what equivalent price must be the rate upon Amsterdam, to prevent any loss ?

The Rates for both these places are Foreign.

F. Paris	Remit	p	25.50
		g	25.60
F. Amsterdam	Draw	g	12.10
		p	x

$$\frac{12.10 \times 25.50}{25.60} = 12.05 \text{ Answer.}$$

Hence, as the course by falling has become unfavourable for remitting, the course upon Amsterdam must be improved, also by falling to a proportionate rate ; viz. Flor. 12 1 St.

* In the following formulæ, the blank term is denoted by the letter x, and it may be here observed, that when this letter occurs in statements of Equations, Proportions, &c. it must be understood as the Algebraical expression for the required quantity

Example 2.

I have orders to remit upon Paris at 25.60, and to draw upon Amsterdam at 12 2.—If the Amsterdam rate improves for drawing to 12 1, to what depreciation in the Paris rate shall I be limited?

Rates as Ex. 1.

			$\dfrac{p}{g}$	x
F.	Paris	Remit		25.60

			$\dfrac{g}{p}$	
F	Amsterdam	Draw		12.10
				12.05

$$25.60 \times 12.05 \div 12.1 = 25.49 \text{ Answer.}$$

The remittance may therefore be executed as far as 25.50, without making the given limits worse.

Example 3.

I have to remit upon Madrid at 49¾, and to draw upon Lisbon at 53. The Madrid rate having risen to 50, to what rate shall I be limited for Lisbon.

The rates for both these places are Sterling.

			$\dfrac{g}{p}$	49¾
S.	Madrid	Remit		50

			$\dfrac{}{g}$	
S.	Lisbon	Draw		53

$$53 \times 50 \div 49\tfrac{1}{4} = 53\tfrac{1}{4}$$

Hence, from the Madrid rate having got worse for remitting, I must not execute the order unless the Lisbon rate rises above 53¼ d, as otherwise I shall not obtain enough for the Bills on Lisbon to answer the proportionate advance of the Bills on Madrid.

EXAMPLE 4.

I have to remit on Madrid at 50, and draw upon Lisbon at 53 —If the Lisbon rate improves for drawing to 53¼ to what extent may I go with Madrid ?

Both rates are Sterling. .

| S. | Madrid | Remit | $\dfrac{g}{p}$ | $\dfrac{50}{x}$ |
| S. | Lisbon | Draw | $\dfrac{p}{g}$ | $\dfrac{53\frac{1}{4}}{53}$ |

50 × 53¼ ÷ 53 = 50¼ Answer.

The Lisbon rate having improved, I shall get more for my Drafts, and can therefore afford to give more for the Bills upon Madrid, should this rate also have risen.

EXAMPLE 5.

I have to remit upon Lisbon at 53, and draw upon Paris at 25.60—If the Paris rate improves to 25.50, to what rate shall I be limited upon Lisbon ?

London upon Lisbon　—　Sterling rate.
London upon Paris　—　Foreign rate.

| S. | Lisbon | Remit | $\dfrac{}{p}$ | $\dfrac{53}{x}$ |
| F. | Paris | Draw | $\dfrac{g}{p}$ | $\dfrac{25\,60}{25.50}$ |

53 × 25.60 ÷ 25.50 = 53⅗ Answer.

Example 6.

I have to remit upon Lisbon at 53, and to draw upon Paris at 25.60—If the Lisbon rate is $53\frac{1}{4}$, at what rate may I draw upon Paris?

			$\dfrac{g}{p}$	$\dfrac{53}{53\frac{1}{4}}$
		Remit		
F.	Paris	Draw	$\dfrac{g}{x}$	$\dfrac{25.60}{x}$

$$25.60 \ \times \ 53 \ \div \ 53\frac{1}{4} \ = \ 25.48 \text{ Answer.}$$

Example 7.

If I have to remit upon Paris at 25.60, and to draw upon Lisbon at 53, and Paris Bills are now 25.50, at what least rate must I be able to draw upon Lisbon to execute this order?

F.	Paris	Remit	$\dfrac{p}{g}$	$\dfrac{25\ 50}{25.60}$
S.	Lisbon	Draw	$\dfrac{p}{g}$	$\dfrac{x}{53}$

$$25.60 \ \times \ 53 \ \div \ 25.50 \ = \ 53\frac{3}{16} \text{ Answer.}$$

Example 8.

If I have to remit upon Paris at 25.60, and to draw upon Lisbon at 53, and the Lisbon rate is now $53\frac{1}{4}$, to what extent may I limit the Paris rate?

F.	Paris	Remit	$\dfrac{p}{g}$	
				25.60
S.	Lisbon	Draw		$\dfrac{53\frac{1}{4}}{53}$

$$25.60 \ \times \ 53 \ \div \ 53\frac{1}{4} \ = \ 25.48 \text{ Answer.}$$

Exercises.

Ex. 1. I have an order from Leghorn to remit Bills upon either Paris at 25.60, Amsterdam at 12 2, Hamburg at 13 10, or Genoa at 25.75, but the present rates being, Paris 25.50, Amsterdam 12 0½, Hamburg 13 8½, and Genoa 25.65, which Paper should I select?

2. I have an order from Paris to remit Bills upon either Amsterdam at 12 1½, Hamburg at 13 10½, Frankfort at 121, Madrid at 49½, or Leghorn 30.30.—The present rates are on Amsterdam 12 1, Hamburg 13 9½, Frankfort 120, Madrid 50, Leghorn 30.45, which Paper should I select?

3. I have orders from Hamburg to draw upon either of the following places, or the best that the variations from the following rates may allow; viz., upon Paris at 25.40, Amsterdam at 12 1, Cadiz at 49⅝, or Lisbon at 51¼, which place should I select, the present rates being as follows: on Paris 25.50, Amsterdam 12 2⅞, Cadiz 49⅛, and Lisbon

4. I have an order to remit Bills upon Amsterdam at 12 1, and to draw upon Hamburg at 13 10, or at equivalent rates; but the present rates being on Amsterdam 12 2½, and Hamburg 13 12, should I execute this order?

5. I have an order to remit Bills upon Venice at 48¼, and to draw upon Lisbon at 53, or at equivalent rates, should I execute this order at the present rates of Venice 48¾, and Lisbon 53¾?

6. The rates to which I am limited being, in a compound order, to remit on Leghorn at 30.50 and to draw upon Paris at 25.45, or at not less advantageous rates—Am I authorised to act, the present rates being on Leghorn 30.40, and on Paris 25.37½?

Ex. 7. My orders being to remit upon Paris at 25.50, and to draw upon Amsterdam at 12 2, and the price on Paris being 25.40, at what equivalent price should be the rate upon Amsterdam, to enable me to act without loss to my correspondent?

8. I have orders to remit upon Paris at 25.55, and to draw upon Hamburg at 13 10; the Hamburg rate has improved for drawing to 13 9½, to what depreciation in the Paris rate am I limited?

9. I have to remit upon Lisbon at 53, and to draw upon Leghorn at 30.50.—If the Lisbon rate rises to 53½, to what rate shall I be limited for Leghorn?

10. I have to remit upon Lisbon at 56, and to draw upon Madrid at 49⅜.—If the Madrid rate improves for drawing to 50, to what depreciation may be the rate at which I may take Paper upon Lisbon?

11. I have to remit upon Lisbon at 56, and to draw upon Paris at 25.50.—If the Paris rate improves to 25.37½, to what limit shall I be restrained upon Lisbon?

12. I have to remit upon Lisbon at 56, and to draw upon Genoa at 25.60.—If the Lisbon rate rises to 56½, at what equivalent rate may I draw upon Genoa?

13. If I have to remit upon Paris at 25.65, and to draw upon Lisbon at 56, at what rate may I draw upon Lisbon, if the Paris rate falls to 25.55?

Answers.

Ex. 1.	Genoa	—	Difference		3.9 per	1000
2.	Amsterdam	—			2.1 —	1000
3.	Paris	—			4.0 —	1000
4.	Rates unfavourable			Ex. 5.	Rates favourable	
6.	Rates unfavourable			7.	Amster. Flor. 12	1.04
8.	Paris Frs. 25 49.1			9.	Leghorn Lire	30.21
10.	Lisbon Pence 56.71			11	Lisbon Pence	56.27
12.	Genoa Lire 25.37			13.	Lisbon Pence	56.10

BULLION OPERATIONS.

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Bullion Operations are the import and export of Gold and Silver, either coined or uncoined, to create funds for the purposes of exchange operations.

The chief object of the calculations connected with Foreign Bullion Operations, is to find either from the prices in the two countries concerned, what rate or Par of exchange they yield, or from the price and rate of exchange at one of the places, what arbitrated price is equivalent at the other place.

In the valuation of Gold and Silver in this country, the price of either is determined from the quantity that it contains of metal of a certain purity, called Standard, which standard quantity necessarily depends upon the purity of the given metal, as determined by a process called its Assay.*

In the following consideration of these operations, we shall, first, under the head of the Valuation of Bullion, show the manner in which the fine and standard weights of Bullion are calculated, and the mode in which it is valued, both in this country and in France, the Netherlands, Germany, and Spain; and then, under the head of Arbitrations of Bullion, the most usual comparisons that are made between these values, both for arbitrated Pars and Prices.

Bullion, or Gold and Silver in Bars or Ingots, may be considered as the chief regulator of Exchanges; for when the arbitrated rate produced from the prices in this and any other country differs from the rate of Exchange for Bills between the same, by an amount exceeding the charges of purchase, transport, and sales, Bullion immediately begins to flow into that country in which it yields the best comparative price. Gold, as being the easier of transport, is commonly employed, though, when taken to places where there are no facilities for its mintage, Gold in coin is always preferred.†

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* For modes of Assay, &c., see Tate's 'Counting-House Guide.'

† A demand for Gold Coin further arises in times of war and public disturbances, for the payment of armies, and for secretion or personal conveyance. Also, as nations advance in opulence, the demand for Gold, both for coinage and manufacture, becomes the more general.

VALUATION OF BULLION.

THE STANDARDING OF GOLD AND SILVER.

The standarding of Gold and Silver is the calculation of the quantity of standard Gold or Silver that is contained in, or that could be obtained from, the full weight of the given metal, according to the assay report of its fineness.

The British standard purity of Gold is 22 Carats of fine Gold out of 24 Carats full weight of metal. The Gold Carat is a nominal weight divided into 4 Grains, each of which is subdivided into Quarter or Half-Quarter Grains.

If the 24 Carats are reckoned 1 Pound in weight, then 1 Carat equals 10 Dwts Troy, 1 Carat Grain equals 2 Dwts. 12 Grains Troy, and 1 Quarter-Carat Grain equals 15 Grains Troy.

The British standard purity of Silver is 11 Oz. 2 Dwts. of fine Silver out of 12 Oz. full weight of metal. The Ounce is 20 Pennyweights, and in assays of Silver the Pennyweight is divided into Half-Pennyweights.

The reports of the purity of the metal tried or assayed are, by English assayers, made in comparison with these standards, and the comparative difference is called its Betterness or Worseness.

Thus, Gold 23 Carats 3 Grains fine, is called Better 1 Carat 3 Grains; and Gold 20 Carats 1 Grain fine, Worse 1 Carat 3 Gr.

Also, pure Silver, or Silver 12 Oz fine, is said to be Better 18 Dwts.; and Silver which is only 10 Oz. fine is reported Worse 1 Oz. 2 Dwts.

N. B. The British standards are the mintage Purities of the Gold and Silver Coins of the Realm.

TO FIND THE STANDARD WEIGHT OF GOLD.

Multiply the full weight by the number of Carats, take parts for the Grains, and divide the amount by 22, for the Betterness or Worseness.

(or)

Take parts out of the full weight, for the report out of 22 Carats, and the amount will be the Betterness or Worseness

Then add the Betterness, or subtract the Worseness, to or from the full weight, and the sum or remainder will be the standard weight.*

Gold in large quantities is not weighed with greater nicety than to 12 Grains, but the standard weight is calculated to 1 Grain.

EXAMPLE.

To find the standard weight of 48 lb 11 oz. 7 dwts 12 grs of Gold, reported Worse 1 car. 3¾ grs.

		lb	oz	dw	gr			
½	. .	48	11	7	12	. for	1 carat.	
½	. .	24	5	13	18	.	. 2 grains.	
½	. .	12	2	16	21	. . .	1	—
½	. .	6	1	8	10	.	½	—
		3	0	14	5	. .	¼	—

$$2 \,)\ 94\quad 10\quad 0\quad 18$$

$$11 \,)\ 47\quad 5\quad 0\quad 9$$

$$4\quad 3\quad 14\quad 14 \quad \text{Worseness.}$$

lb   44   7   12   22   Standard.

Oz. 535   12   22

---

* The standard weight is also called the pay-weight.

TO REDUCE THE FULL WEIGHT OF GOLD TO THE FINE WEIGHT.

Find the standard weight, and subtract from it the 1-12 th part;

(or)

To 22 Carats add the report if Better, or from 22 Carats subtract the report if Worse, to find the Carats fine ; then multiply the full weight by the number of these Carats, and take parts for the Grains, and divide the amount by 24.

N. B.   Sometimes it may be shorter to take parts for the Carats fine out of 24 Carats; or to take parts for their deficiency out of 24 Carats, to find the allowance for alloy.

EXAMPLE 1.

To find the fine weight of 48 lb 11 oz. 7 dwts. 12 grs. of Gold, reported Worse 1 car. 3¾ grs.

The standard weight by the preceding example, is

$$
\begin{array}{llll}
 & \text{oz} & \text{dw} & \text{gr} \\
\tfrac{1}{12} \text{ - -} & 535 & 12 & 22 & \text{Standard.} \\
 & 44 & 12 & 18 & \text{Alloy.} \\
\hline
\text{Oz.} \quad 491 & 0 & 4 & \text{Fine.}
\end{array}
$$

(or)

22 carats, less 1 car. 3¾ grs. = 20 car. 0¼ gr. fine

$$
\begin{array}{llll}
 & \text{oz} & \text{dw} & \text{gr} \\
\tfrac{1}{3} \text{ - -} \tfrac{1}{2} \text{ - -} & 587 & 7 & 12 & \text{Full Weight.} \\
 & 293 & 13 & 18 & \text{for 12 \quad car.} \\
\text{- -} & 195 & 15 & 20 & \text{— \quad 8 \quad —} \\
 & 1 & 10 & 14 & \text{— \quad ¼ gr.} \\
\hline
\text{Oz.} \quad 491 & 0 & 4 & \text{Fine Weight.}
\end{array}
$$

Example 2.

To find the fine weight of 4 dwts. $5\frac{3}{4}$ grs of Gold, reported Better 1 car. $3\frac{1}{2}$ grs.

22 Carats and 1 car. $3\frac{1}{2}$ grs $= 23$ car. $3\frac{1}{2}$ grs.

$$
\begin{array}{llll}
 & \text{dw} & \text{gr} & \\
\frac{1}{192} - - & 4 & 5.75 & \text{for 24 Carats, fine.} \\
 & 0 & 53 & - - \frac{1}{2} \text{ Gram, alloy.} \\
\hline
\text{Dwts} & 4 & 5.22 & \text{grs fine weight.} \\
\hline
\end{array}
$$

23 Carats $3\frac{1}{2}$ Grains fine, make only $\frac{1}{2}$ Grain of alloy in 24 Carats full weight; hence as 1 Grain is the 96 th part of 24 Carats, for the $\frac{1}{2}$ Grain we take the 192 nd part.

When the fine as well as the standard weight is required, it is frequently better, first to find the fine weight, and then to find the standard weight by adding 1-11 th part to it, as

$$
\begin{array}{lll}
 & \text{dw} & \text{gr} & \\
\frac{1}{11} - - & 4 & 5.22 & \text{Fine.} \\
 & & 9.20 & \text{Alloy} \\
\hline
\text{Dwts} - & 4 & 14.42 & \text{Standard.} \\
\hline
\end{array}
$$

The reason of this evidently is, because 11 Oz. of fine Gold will make 12 Oz. of standard Gold ;* and therefore the alloy to be added to fine Gold, or taken from standard Gold, to change the one into the other, is 1-11 th of the fine weight or 1-12 th of the standard weight.

---

* That 1 Carat Better or Worse should require 1-22 nd part of the whole weight (and that any other quantity should require a proportional product) to be added or subtracted to reduce it to standard, is also evident from the nature of the report, for 1 Carat Worse means that in 22 Ounces of the given Metal, there is 1 Ounce too much of alloy ; and therefore the weight of standard Gold which it contains, is only 21 Ounces . this may be proved thus—Worse 1 Carat, is 21 Carats fine , which means that 21-24 ths of the Metal is fine Gold.—Out of 22 Ounces therefore of this quality of Gold, 21-24 ths or $19\frac{1}{4}$ Oz. are fine Gold , but 1-11 th of the weight of fine Gold is the alloy required to reduce it to standard Gold, and 1-11 th of $19\frac{1}{4}$ Oz. is $1\frac{3}{4}$ Oz. the weight of the alloy, which added to the $19\frac{1}{4}$ Oz. makes 21 Oz. of standard Gold, and gives the same result as before.

TO FIND THE VALUE OF GOLD.

Gold is valued either from the full weight, by a price vary-
ing according to the variation in purity, being about 3 s 6 d
per Carat, and 10½ d per Grain if Better, or 4 s per Carat and
1 s per Grain if Worse, the latter allowance being the greater
to defray the expense of refining ;—or by the Market Price per
Oz. Standard, from the quantity of standard Gold ;—or by the
fixed Mint Price of Gold, which is £ 3 17 10½ per Oz. Stand-
ard ; the latter being the rate usually set upon Coins for de-
termining their intrinsic value as Money.

EXAMPLE 1.

To find the value of 14 lb 3 oz. 11 dwts 12 grs of Doubloon
Gold at 76 s per oz.

14 lb 3 oz. 11 dwts 12 grs = 171 oz. 11 dwts 12 grs.

$$
\begin{array}{rrll}
£ & s & d & \\
171 & 11 & 6 & \text{amount at 20 s} \\
\\
686 & 6 & 0 \quad - \quad - & 80\ s \\
34 & 6 & 4 \quad - \quad - & 4\ s \\
\\
£\ \ 651 & 19 & 8 \quad - \quad - & 76\ s
\end{array}
$$

N. B. At 20 s per oz. every dwt is worth 1 s and every grain
½ d ; therefore we take as many pounds and shillings as there
are oz. and dwts, and half as many pence as there are grains.

Example 2.

To find the amount of 11 lb 8 oz. 7 dwts 12 grs of Gold, reported Worse 0 Car. 2 grs, at 77 s 6 d per Oz. Standard.

```
          lb  oz  dw  gr
 ½ -  -   11   8   7  12

  2  )      5  10   3  18   for 2 grs.
          ──────────────────
 11  )      2  11   1  21

                    3   3  19   Worseness.

     lb    11   5   3  17   Standard.

     oz   137   3  17      at £ 3 17 6 per Oz.

  or oz        137.185
```

```
        £   s   d                      £
       137   3   8½          or      137.185
                 4                         4
       ──────────────              ──────────────
       548  14  10    for   80 s      548.740
        17   3   0    ─     2 s 6 d    17.140

     £ 531  11  10                   £ 531.595
```

It is of no consequence whether the pounds are reduced into ounces before or after the standard weight is found; but it is now the custom of the Bank and private dealers to weigh Gold by the Ounce divided into 1000 parts, but not to a greater nicety than .025; and Silver by the Oz. divided into 10 ths, but not lower than 5-10 ths

N. B.   In the practice of business the Worseness of Gold is calculated to the nearest grain.

EXAMPLE 3.

To find the standard and fine weights and the value at 77 s 10½ d per Oz. Standard, of a Prussian Double Frederick d'or weighing dwts 8 14 grs and reported Worse 2 grs.

dw   gr
8   14

Grains.

2   )   103   for 2 Grains Worse

11   )   51 5

4.681   Worseness.

- 201.319   Grains, Standard.
16 776   Alloy.

Grains   184.543   Fine.

Grains   201.319   = 8 dwts 9 319 grs.

s   d
- - 8   4 659   * Value at 20 s
4

33   6.636   —   — 80 s

10.065   —   — 2 s

s   32   7 942   —   — 77 s   10½ d

Products — Standard Weight 8 dwts 9.31 grs.
Fine Weight 184.54 Grains—Value 32 s 7.94 d.

N. B. For greater exactness, even when the results are given in hundredths, the remainders may be extended, as above, to the third place of decimals.

---

* This 4.659 d is found by dividing 9.319, the number of the Grains, by 2.

Exercises.

Ex. 1. Find the weight of standard Gold contained in 11 lb 10 Oz. 16 Dwts of Gold, reported Worse 2 Car. 2 Grs.

2. Find the weight of standard Gold contained in 16 lb 4 Oz. 11 Dwts 12 Grs of Gold, reported Better 0 Car. 1¾ Gr.

3. Find the weight of standard Gold contained in 8 Dwts 4¾ Grs. of Gold, reported Better 0 Car. 1½ Gr.

4. Find the weight of standard Gold contained in 2 Dwts 5¾ Grs. of Gold, reported Better 1 Car. 3¾ Grs.

5. What is the weight of fine Gold contained in 9 lb 11 Oz. 14 Dwts 12 Grs of Gold, reported Worse 0 Car. 3½ Grs ?

6. What is the weight of fine Gold contained in a Coin, weighing 5 Dwts 8½ Grs. reported Worse 0 Car ¼ Gr ?

7. What is the value of 4 lb 7 Oz. 4 Dwts 12 Grs of Gold, at 74 s per Oz. ?

8. What is the value of 21 lb 10 Oz. 18 Dwts 12 Grs. of Gold, reported Worse 1 Car. 3¼ Grs. at 77 s 6 d per Oz. Standard ?

9. What are the standard and fine weights of the following Coins, and what are their values at 77 s 10½ d per Oz. Standard ?

Country.	Names.		dwt	gr		C	gr	
French . .	Napoleon .	Weight	4	3½	Report	0	1¾	Worse.
———— . .	Doub. Lou 48 L.—		9	20	—	0	1¼	W
Dutch . .	Ducat . .	—	2	5¾	—	1	2¼	Better.
———— . .	10 Florins .	—	4	7¾	—	0	1¾	W
Hanoverian	George d'or .	—	4	6½	—	0	1¼	W
Danish . .	Christian d'or	—	4	7	—	0	1	W
Austrian .	Half-Sovereign	—	3	14	—	0	0¼	W
———— . .	Ducat . .	—	2	5⅞	—	1	2¾	B
Russian . .	Imperial . .	—	4	3½	—	Standard.		
Bavarian .	Max d'or .	—	4	4	—	3	2¼	W
Portuguese	Dobraon	—	34	12	—	Standard.		
————	Joannese .	—	9	6½	—	0	0¼	W
Spanish . .	Doubloon	—	17	8½	—	1	0¼	W

Country.	Names.*		dwt	gr		C	gr	
American	. Eagle .	Weight	11	6	Report	0	0¼	Worse.
Calcutta	. Mohur . .	—	8	12¾	—	0	0¼	W.
Madras .	. Mohur . .	—	7	12	—	0	0¼	W.
Bombay	. Mohur . .	—	7	11	—	0	0¼	Better.

* For Reports of the New East-Indian and American Gold Coins, see pages 118 and 132.

PRODUCTS.

Ex. 1. Worseness, lb 1 4   4 13   Standard Oz. 126 11 11

    2. Betterness, lb 0 3 18   4   —   Oz. 200   9 16

    3. Betterness, Grs   3.35   —   Dwts 8   8.10 grs.

    4. Betterness, Grs   4.73   —   Dwts 2   10.48 grs.

    5. Fine Wt. Oz.   105 7 16   Ex. 6. F. Wt. dw. 4   21.45 grs.

    7.   Value £ 204 6 8   8. Value £ 934   18   0

9.		dwt	gr		grs		s	d
Napoleon	St. Wt.	4	1 52	Fine	89.39	Value	15	9.86
Double Louis	—	9	15.97	—	212.64	—	37	7.63
Ducat	—	2	9 56	—	52.77	—	9	4.07
10 Florins	—	4	5 68	—	93.21	—	16	5 97
George d'or	—	4	5 04	—	92.62	—	16	4.72
Christian d'or	—	4	5.83	—	93.34	—	16	6 25
Half-Sover.	—	3	13.75	—	78.61	—	13	10.95
Ducat	—	2	10 00	—	53.17	—	9	4.93
Half-Imperial	—	4	3.50	—	91 20	—	16	1.71
Max d'or	—	3	11.80	—	76.82	—	13	7.16
Dobraon	—	34	12.00	—	759.00	—	134	4.01
Joannese	—	9	5.86	—	203.37	—	35	11.95
Doubloon	—	16	11.20	—	362.26	—	64	1.40
Eagle	—	11	4.46	—	246.09	—	43	6.67
C. Mohur	—	8	12.16	—	187.15	—	33	1.49
M. Mohur	—	7	11.48	—	164.53	—	29	1.44
B. Mohur	—	7	11.50	—	164.54	—	29	1.48

TO FIND THE STANDARD WEIGHT OF SILVER.

Multiply the full weight by the number of Pennyweights in the report, and divide the product by 222 for the Betterness or Worseness.

Or divide the full weight by 37 for the Betterness or Worseness at 6 Dwts, and proportion this result to the given report.

Then add the Betterness or subtract the Worseness to or from the full weight.

N. B. The full weight of Silver in large quantities, is not taken lower than to quarters of an Ounce.—The standard weight is calculated to 1 Dwt.

EXAMPLE.

To reduce 17 lb 10 oz. 15 dwts of Silver, reported Wor 8 ¦ Dwts, to standard weight.

```
                    lb  oz  dw
    ½  -  -        17  10  15
                             8

           143   2   0
             8  11   7
          ─────────────
           152   1   7

 222 ) 1825 ( 8 oz.  4 dwts.
         49

      )  987 ( 4 dwts.
         99

            lb  oz  dw
            17  10  15   Full Weight.
                 8   4   Worseness.

            17   2  11   Standard.
             ──
   Oz. 206  11 dwts.
```

TO REDUCE THE FULL WEIGHT OF SILVER TO THE FINE WEIGHT.

Multiply the full weight by the number of Pennyweights fine, taken from the report, and divide the product by 240.

Or, take parts for the Pennyweights of alloy out of 240 Dwts, and subtract the amount.

Or, having found the standard weight, multiply it by 37, and divide the product by 40.

EXAMPLE.

To find the quantity of fine Silver, in 39 oz. 10 dwts of Silver, reported Worse 6 Dwts.

222 dwts fine, less 6 dwts Worse = 216 dwts fine.

Hence the Alloy = 24 dwts.

$$\begin{array}{ll} & \text{oz dw} \\ \frac{1}{10} \text{ - - } & 39 \ 10 \quad \text{Full Weight.} \\ & 3 \ 19 \quad \text{Alloy for 24 dwts.} \\ \hline \text{Oz. } & 35 \ 11 \quad \text{Fine Weight.} \end{array}$$

The Alloy being here 24 dwts, or the 10 th part of 240 dwts, one tenth of the full weight is taken off, and the remainder is the fine weight.

(or,)

$$\begin{array}{ll} & \text{oz dw} \\ \frac{1}{37} \text{ - - } & 39 \ 10 \quad \text{at 6 dwts Worse.} \\ & 1 \ 1 \quad \text{Worseness.} \\ \hline \frac{1}{20} \text{ - - } & 38 \ 9 \quad \text{Standard Weight.} \\ \hline \frac{1}{2} \text{ - - } & 1 \ 18\frac{1}{2} \quad \text{for 2-40 ths.} \\ & 19\frac{1}{4} \quad \text{1-40 th.} \\ \hline \text{Oz. } & 35 \ 11 \quad \text{Fine Weight.} \end{array}$$

TO FIND THE VALUE OF SILVER.

The Mint price of standard Silver at 66 d per Oz. is so much above the value that standard Silver has for many years borne, that it rarely is valued otherwise than as Bullion.

Dollars are usually sold by the full weight, at a variable price per Ounce.

Other Silver is sold by the standard weight, at a variable price per Ounce Standard.

But Coins are usually valued from the standard weight, at the fixed price of 5 s per Ounce Standard.

EXAMPLE 1.

What is the value of 128 lb 11 oz. 15 dwts of Dollar Silver, at 57⅞ d per Ounce ?

128 lb 11 oz. 15 dwts = 1547 oz 15 dwts.

	£	s	d		
¼ - -	1547	15	0	Amount at 20 s	
⅛ - -	309	11	0	—	48 d
½ - -	38	13	10½	—	6 -
¼ - -	19	6	11¼	—	3 -
⅙ - -	4	16	9	—	⁶⁄₈ -
		16	1½	—	⅛ -

£ 373 4 8 Sterling.

In the above manner also the valuation is made when the price is per Ounce Standard, after the full weight has been reduced to the standard weight, in the manner of the example page 144.

The valuation at 20 s per Oz. has been explained, page 191.

At 5 s per Oz. 1 Dwt is worth 3 d, and 1 Grain is worth 1-8 th of a Penny, and therefore 1-8 th of the number of standard Grains is the value in Pence.

EXAMPLE 2.

To find the standard and fine weights, and the value at 5 s per Oz. Standard, of a Mexican Dollar weighing 17 dwts 8 grs. reported Worse 8 Dwts.

$$17 \text{ dwts } 8 \text{ grs} \quad = \quad 416 \quad \text{Grains.}$$

	gr	
$\frac{1}{3}$ - -	416	for 6 dwts.
	138.666	— 2 dwts.

$$37 \quad) \quad 554.666 \quad (\quad 14.990$$
$$\qquad\qquad 36 \quad \text{remainder.}$$

	416	Full Weight.
	14.990	Worseness.
	———	
	401.010	Standard.
$\frac{1}{2}$ - -	20.050	
	10.025	
	———	
Grains	370.935	Fine.
	———	

$$\begin{array}{c} \text{d} \\ 8 \quad) \quad 401.01 \end{array}$$

Pence	50⅛	Value.

Products — Standard Weight, grs 401.01 = 16 dwts. 17.01 grs.

Fine Weight — 370.93 Grains — Value 50⅛ d.

N. B. In the valuation of Coins, the remainders may be extended as directed in page 193.

The amount at 5 s per Oz. Standard is, as before stated, 1-8 th of a Penny for each Grain in the Standard Weight.

EXERCISES.

Ex. 1. Find the standard weight in Oz. of a bar of Silver weighing lb 61 4 15, reported Better 6½ Dwts.

2. Find the standard weight in Oz. of a bar of Silver weighing lb. 27 10 10, reported Worse 1 Oz. 17 Dwts.

3. Find the fine weight of Oz. 87 5 Dwts of Silver, Worse, 7½ Dwts.

4. Find the average full, standard, and fine weights of a Spanish Dollar, from the estimate of 1000 Dollars weighing Oz. 866, the assay report being Worse 8 Dwts ; and also find the value at 59¾ d per Oz. Standard.

5. Find the standard and fine weights, and the value at 5 s per Oz. Standard of each of the following Coins.

Country.	Names.		dwt	gr		oz	dw	
French . .	5 Francs	Weight 16	1¾	Report 0	6	Worse.
Dutch . .	Guilder or Flo. —	6	22	—	0	8	W
Hanoverian	F. Zweydrittel —	8	9	—	0	16	Better.
Hamburg .	Current Mark —	5	21½	—	2	2	W
Danish . .	Rigsbank Doll. —	9	7	—	0	12	W
Prussian .	Current Dollar —	14	7	—	2	3	W
Russian . .	Silver Ruble —	13	8	—	0	14	W
Austrian .	Speciesthaler —	18	1	—	1	2	W
L. Veneto	6 Lire —	16	17½	—	0	7	W
Neapolitan	Ducat del Reg. —	14	18	—	1	2	W
Sicilian . .	Crown 12 Tari —	17	14	—	1	4	W
Roman . .	Scudo —	17	1	—	0	3	W
Portuguese	Crusado Novo —	9	3	—	0	4	W.
Spanish .	Pillar Dollar —	17	8	• —	0	7	W.
Mexican .	Dollar, 1833 —	17	11	—	0	6½	W.
Peruvian .	Dollar, 1833 —	17	7½	—	0	5	W.
U. States .	Dollar, Stand. —	17	8	—	0	8	W.
Calcutta .	Sicca Rupee —	8	0	—	0	2	W.
Madras .	Rupee (New E. I.)	7	12	—	0	2	W.
Bombay .	Rupee —	7	11	—	0	1¼	W.

PRODUCTS.

Ex. 1. Betterness, 1 lb 9 oz. 11 dwts ; Stand. oz. 758   6 dwts.

   2. Worseness, 4 lb 7 oz. 15 dwts ;   —   oz. 278   15 dwts.

   3. Fine weight,   77.9797 oz.

   4. Average Weight   dwts 17   7 68 grs.
      Standard Weight dwts 16   16.69 grs.
         Fine Wt 370.64 grs   —Value 49 87 Pence

5.		dw	gr		grs		s	d
5 Francs	St. Wt.	15	15.32	Fine	347.17	Value	3	10.91
Florin	—		6	16.01	—	148.01	—	1	8.00
Zweydrittel	—	8	23.48	—	199 32	—	2	2.93
Current Mark	—	4	18 73	—	106.12	—	1	2 34
Rigsb. Dollar	—	8	18.94	—	195 12	—	2	2.36
Prussian Dollar	—	11	12.56	—	255.82	—	2	10.57
Silver Ruble	—	12	11 82	—	277.33	—	3	1.47
Speciesthaler	—	16	6 09	—	360.83	—	4	0.76
6 Lire	—	16	4.84	—	359.67	—	4	0.60
Ducat del Reg.	—	13	6.91	—	295.00	—	3	3.86
Sicilian Crown	—	15	16.37	—	348.15	—	3	11.04
Roman Scudo	—	16	19.47	—	373.21	—	4	2 43
Crusado Novo	—	8	23.05	—	198.92	—	2	2.88
Pillar Dollar	—	16	18.88	—	372.66	—	4	2.36
Mex. Dollar	—	16	22.73	—	376 22	—	4	2.84
Peruv. Dollar	—	16	22.14	—	375 68	—	4	2.76
U. S. Dollar	—	16	17.01	—	370.93	—	4	2.12
Sicca Rupee	—	7	22.27	—	176.00	—	1	11.78
Madras Rupee	—	7	10.37	—	165.00	—	1	10.29
Bombay Rupee	—	7	10 00	—	164.65	—	1	10.25

TO FIND THE VALUE OF GOLD AND SILVER PARTINGS.

Gold and Silver Partings are mixtures of these Metals with or without any Alloy ; the mixture being called a Gold Parting when the Gold is in greater quantity, and a Silver Parting when there is more Silver than Gold.

The report of a Gold Parting is made thus ;

<div align="center">

Worse — 2 Car 3 Grains.

Fine Silver — 1 Oz. 17 Dwts.

</div>

Which means, that the mass, with regard to the quantity of the alloy, is 2 Carats 3 Grs worse than standard Gold ; and that out of the alloy, the weight of 1 oz 17 dwts per Pound Troy of Metal, is fine Silver.

The report of a Silver Parting is made thus ;

<div align="center">

Worse — 0 Oz. 8 Dwts.

Fine Gold — 10 Troy Grains

</div>

Meaning that the Metal, as a mixture of Silver, is 8 Dwts worse than standard Silver ; and that a Pound Troy of the Metal contains 10 Troy Grains of fine Gold.

The valuation of a Gold Parting is more commonly made by a rate agreed upon between the Purchaser and Seller, than by a separate valuation of each of the precious Metals ; but with a Silver Parting it is rather the reverse.

N. B. Sometimes the actual quantities of both Metals are reported, thus ;

<div align="center">

Fine Gold 7 Oz. }
Fine Silver 3 Oz. } in the Pound.

</div>

Which, as a Gold Parting, is equivalent to, Worse 8 Carats ; fine Silver 3 Oz. in the Pound.

EXAMPLE 1.

To find the value per Oz. of a Gold Parting Ingot, reported

Worse	—	2 Carats 3 Grains.
Fine Silver	—	1 Oz. 17 Dwts per lb.

reckoning standard Gold to be worth 77 s 6 d per Oz. and standard Silver 5 s per Oz. and the expense of refining to be 8 d per Oz.

		s	d	
$\frac{1}{11}$ - -		77	6	Price per Oz. Standard.
		7	$0\frac{1}{2}$	for 2 Carats.
		1	9	— 2 Grs.
			$10\frac{1}{2}$	— 1 Gr.
		9	8	Allowance for Worseness.
		67	10	Value of the Gold per Oz.

Silver		s	d
		5	0	Stand.
3-37 ths			5	Alloy.
1 oz. . . .		5	5	Fine.
10 dwts . .		2	$8\frac{1}{2}$
5 — . .		1	$4\frac{1}{4}$
2 — . .			$6\frac{1}{2}$
s 10	$0\frac{1}{4}$ - -		10	Add for fine Silver.

68 8	Value per Oz.
8	Allowance for refining.

Net Value s 68 0 per Oz.

The allowance for the Worseness upon the value per Oz. Standard having been made, we have to make an addition for the fine Silver, at 5 s 5 d per Oz. for 1 Oz. 17 Dwts—but as the latter quantity is contained in 1 lb of Metal, we take 1-12 th of the amount, as the additional value per Ounce for the fine Silver.

EXAMPLE 2.

To find the rate per Oz. of Silver Parting, reported

Worse	—	8 Dwts.
Fine Gold	—	15 Troy Grs per lb.

reckoning standard Silver to be worth 5 s per Oz. and fine Gold 84 s 6 d per Oz.; and allowing $1\frac{3}{4}$ d per Oz. for the expense of refining.

		s	d	
		5	0	
1-37 th	- -		1.62	for 6 Dwts.
			.54	— 2 —
			2.16	Allowance for Worseness.
		s 4	9.84	Value of the Silver per Oz.

	s	d			
1 Oz	84	6			
1 Dw.	4	2 7			
12 Grs	2	1.35			
3 Grs	.	6.33			
	2	7.68 per lb	2.64	Add for fine Gold.
			s 5	0 48	Value per Oz.
				1.75	Allowance for refining.
			s 4	10.73 d	or 4 s $10\frac{3}{4}$ d per Oz.

The principles upon which the valuations of Gold and Silver Partings are made, are necessarily dependent on those by which the Assayer makes his reports; for as these reports state the relative purity to its Standard of the metal giving its name to the parting, and the actual quantity of the other metal in the compound, so in finding either a proportionate price, or the value of a given weight of metal, an increase or allowance is made for the betterness or worseness of the metal comparatively reported, and an addition is made for the value of that of which the actual quantity is given.

EXAMPLE OF THE VALUATION OF SILVER PARTING.

Bars.	Weight.			Report.			
	lb	oz	dw				gr.
No. 1 —	31	10	15	Worse 6½ Dwts	Fine Gold	17	per lb.
2 —	38	3	0	Worse 8 Dwts	do.	11	—
3 —	36	9	10	Worse 8 Dwts	do	35	—
4 —	30	8	10	Better 5 Dwts	do.	22	—

Silver 59¾ d per Oz. Stand. —Gold 77 s 9 d per Oz. Stand.
Allowance for refining, 1 s 9 d per lb.

	lb	oz	dw		lb	oz	dw			gr.
No. 1 —	31	10	15	Worseness	0	11	4	Fine Gold		542
2 —	38	3	0	——	1	4	10	——		421
3 —	36	9	10	——	1	3	18	——		1287
	106	11	5		3	7	12			
4 —	30	8	10	Betterness		8	6	——		675
	137	7	15		2	11	6	Grains		2925
		2	11	6 Net Worseness				Oz.	6	1 21
lb	134	8	9	Standard						

Oz. 1616 9 dwts   - at 59¾ d - £ 402 8 7

	oz	dw	gr
Fine Gold	6	1	21
Betterness˙		10	17 at 1 Car. 3¾ Gr.

				£	s	d				
Stand.	6 12 14	at 77 s 9 d	- -	25	15	5				
Extracting	137 lb 7 oz.	at 1 s 9 d	- -	12	0	9	-	13	14	8

£ 416 3 3

N. B. Fine Gold is here reckoned only 1 Car. 3⅜ Grs. Better, it being difficult to extract Gold, in any large quantity, free from some alloy.

Sometimes instead of allowing the charge for extracting, 8 or 9 Grains are deducted from the report, and the surplus is valued either from the Standard Weight, or at 2 pence per fine Grain.

FRENCH REPORTS.

The French mode of reporting Gold and Silver, is, according to the decimal system, to report the whole of the fine metal, in Millièmes or 1000 th parts of the metal under trial.

Hence as the English lowest division for Gold is into Eighths of Grains,* or the 24 Carats into 768 Eighths of Grains, and for Silver into Half-Dwts, or the 12 Oz. into 480 Half-Dwts, the French reports are finer, or to a greater degree of accuracy, than the English

by 1000 to 768. or about 13 to 10, for Gold; and
by 1000 to 480, or about 2 to 1, for Silver.

The reduction of these decimal reports to the British Standards, is made in the manner of the following Examples.

EXAMPLE 1.

To reduce the French report of 987 Millièmes fine to an English report in Carats.

$$.987$$
$$24$$

Car. 23.688
4

Gr. 2.752

Report 987 Fine = Carats 23 2$\frac{3}{4}$ Gr.
British Standard -   - 22 0

Better — Carats 1 2$\frac{3}{4}$ Gr.

---

* Gold is now commonly reported to half-quarter carat grains, in the Assays made for dealers in bullion, but in those made for manufacturers of Plate, it is seldom reported lower than to quarter carat grains, or 15 Troy Grains in the Pound Troy

REVERSE.

To reduce 1 Carat 2¾ Grs Better into Millièmes.

1 Car. 2¾ Grs Better, are 23 Car. 2¼ Grs fine.

$$4 \quad) \quad 2.75$$

$$24 \quad 4 \quad) \quad 23.6875$$

$$6 \quad) \quad 5.9218$$

Millièmes   987   Raide*

EXAMPLE 2.

To reduce British Standard for Gold, or 22 Carats fine, into Millièmes.

$$2 \quad) \quad 22.$$

$$12 \quad) \quad 11.000$$

Millièmes   917

It must be ·remarked, that there is a little diversity in the practice of French calculators, with respect to reckoning the lowest figure of the Millièmes when there is a remainder that is above half the divisor ; thus some reckon British Standard Gold, which is 916⅔ fine, as 917 fine ; others as 916 fine ; and others extend the decimal thus, 916.66, &c

It may be noticed, that the French assayers are generally considered to make their reports of Gold about 2 Millièmes or ¼ Grain worse than the reports of English assayers ; thus the British Gold Coin is estimated at only 915 fine, and is received into the French mints only at this rate.

---

* When the French reports are made for the guidance of Merchants, it is customary, if the fineness is barely equal to the report, to style it *Raide*, and when it is the full Millième, or a little above, to character it as *Franc* or *Bien Franc*.

EXAMPLE 3.

To reduce the French report of 938 of Silver, to the equiva-
lent English report, in Ounces and Dwts.

	.938		oz.	dw.	
	12				
Oz.	11.256	Report	11	5	Fine.
	20	Standard	11	2	
Dwts	5 120	Better	—	3	Dwts

The number of Dwts fine that answer to the Silver report in
Millièmes, may be found by dividing them by 4, and subtract-
ing from the quotient 1 Dwt out of every 25, or 4 out of 100 —
Thus 938 divided by 4 gives 234½, from which taking 9½ (8 for
200 and 1½ for 34) there remains, as above, 225 Dwts fine.

EXAMPLE 4.

To reduce the English report of Silver, Worse 7 Dwts, into
Millièmes.

Worse 7 dwts, is Fine 10 oz. 15 dwts = 10.75 oz.

12) 10.750

Millièmes   896   *Raide*

EXAMPLE 5.

To reduce the English report for Silver of Standard fineness,
into Millièmes.

Standard is   11 oz. 2 dwts fine.

12) 11.100

Millièmes   925

In French Parting Reports, 1 Millième of Gold is about 5¾
Grains in the English Pound Troy ; but the Gold should be re-
ported 6 Grains at least, to make the full Millième.

PRESENT FRENCH MINTAGE VALUATIONS OF GOLD AND SILVER.

The standard purity of the French Coins of both Gold and Silver is 900 millièmes fine, and the Kilogramme of coined Gold is valued at 3100 Francs, and that of coined Silver, at 200 Francs.

The *Retenue* or charge made to the importers of Gold into the French Mints, for defraying the expense of coinage, was fixed by the Royal Ordinance of the 30th June, 1835, at 6 Francs per Kilogramme for Gold, and 2 Francs per Kilogramme for Silver, making the prices paid by the Mints 3094 Francs per Kilogramme for Gold, and 198 Francs per Kilogramme for Silver. It is upon these prices that the Tariff valuations for the different degrees of purity of these metals are based, the variations in the market price of either being by an Agio or Premium.

From the time of the establishment of the present French monetary system to that of the issuing of the above Ordinance, the *Retenue* was 9 Francs for Gold, and 3 Francs for Silver per Kilogramme, and this *Ancien Tarif* of 3091 Francs for Gold, and 197 Francs for Silver per Kilogramme.

By the Decree of the 22nd March, 1854, the *Retenue* for Gold is fixed at 6 Francs 70 Centimes, making the Price 3093.30 per Kilogramme.

EXAMPLES OF FORMING THE TARIFF RATES.

For Gold 917 fine.
        Francs 3094 × 917 ÷ 900 = Francs 3152.44
For Silver 925 fine.
        Francs 198 × 925 ÷ 900 = Francs 203.50

N. B. In forming these rates it is to be observed, that in dividing by 9, if 5 or above remains it makes the rate another centime. The rate for pure Gold is however called only **Francs 3437.00.**

EXAMPLE OF THE VALUATION OF GOLD AND SILVER.

To find the amount of Kilogrammes 3.071 of Gold, 917 fine, at a Premium of 7 per Mille, upon the Tariff Rate of 3152.44 Francs per Kilogramme, and of Kilogrammes 42.117 of Silver, 925 fine, at a Premium of 3 per Mille, upon the Tariff Rate of 203 50 Francs per Kilogramme.

$$
\begin{array}{ll}
\text{Fr. c.} & \\
3152.44 & \\
3.071 & \\
\hline
9681.14 & \text{Tariff Value} \\
67.77 & \text{Premium.} \\
\hline
\text{Francs } 9748\ 91 & \text{Amount of the Gold.}
\end{array}
$$

$$
\begin{array}{ll}
\text{Fr c.} & \\
203\ 50 & \\
42.117 & \\
\hline
8570.80 & \text{Tariff Value.} \\
25\ 71 & \text{Premium} \\
\hline
\text{Francs } 8596.51 & \text{Amount of the Silver.}
\end{array}
$$

The Premium is found by taking so many thousandths of the Tariff Value, as is indicated by the rate.

The valuations are generally stated in the following form :—

GOLD
			Fr. c.	Fr c.
Kilogr. 3.071 — 917 — 3152.44	··		9681 14	
Premium 7 per Mille.	··		67.77	
				9748.91

SILVER
			Fr. c.	Fr c.
Kilogr. 42.117 — 925 — 203.50	··		8570.80	
Premium 3 per Mille.	··		25.71	
				8596.51

Francs 18345.42

EXERCISES.

Ex. 1. Compare the following decimal reports with British Standard.

Gold 892	Gold 917	Silver 788	Silver 925
— 898	— 925˙	— 892	—· 930
— 900	— 995	— 900	—· 986

2. Reduce the following English reports to Millièmes fine.

Gold Car. 1	2½ Gr. Worse	Silver Oz. 1	2 Dwts Worse.
— — 0	0½ — Worse	— — 0	8 — Worse.
— — 1	2½ — Better	— — 0	14 — Better.

3. Find the Tariff rates and values of the following quantities of Gold at 7 per Mille premium.

Kilogrammes 14.846	Report	996	fine.
—— 11.338	—	944	fine
—— 16.725	—	915	fine.

4. Find the Tariff rates and the values of the following quantities of Silver at 5¾ per Mille premium.

Kilogrammes 22.894	Report	988	fine.
23 679		963	fine.
17.498		907	fine.

PRODUCTS

1. W. 0 C. 2⅜ Gr	W. 0 C. 1⅞ Gr.	W. 0 C 1⅜ Gr.
Standard	B. 0 C. 0¾ Gr.	B 1 C. 3½ Gr.
W. 1 Oz. 13 Dw.	W. 0 Oz. 8 Dw.	W. 0 Oz. 6 Dw.
Standard	B. 0 Oz 1 Dw	B. 0 Oz. 14½ Dw.

2.	848 9	914 0	984.3
	833.3	891.6	983.3

3. Rate,	Francs 3424.03	Value,	Francs 50833.15
	3245.26		36794 76
	3145.57		52609.66
Amount with Premium,		Francs 141219.23	

4. Rate,	Francs 217.36	Value,	Francs 4976.24
	211.86		5016.63
	199.54		3491.55
Amount with Premium,		Francs 13561.95	

TARIFF RATES AND BRITISH REPORTS FOR MILLIEMES OF GOLD.

Mill.	Fr.	C.	C.	gr.	Mill.	Fr.	C.	C.	gr.
1000	3437	77	B 2	0	953	3276	20	B 0	3½
999	3434	34	1	3⅞	952	3272	76	0	3⅝
998	3430	90	1	3¾	951	3269	33	0	3½
997	3427	46	1	3⅝	950	3265	89	0	3⅜
996	3424	03	1	3½	949	3262	45	0	3
995	3420	59	1	3½	948	3259	01	0	3
994	3417	15	1	3⅜	947	3255	58	0	2⅞
993	3413	71	1	3¼	946	3252	14	0	2¾
992	3410	28	1	3⅛	945	3248	70	0	2⅝
991	3406	84	1	3⅛	944	3245	26	0	2½
990	3403	40	1	3	943	3241	82	0	2½
989	3399	96	1	2⅞	942	3238	39	0	2⅜
988	3396	52	1	2¾	941	3234	95	0	2¼
987	3393	09	1	2⅝	940	3231	51	0	2⅛
986	3389	65	1	2½	939	3228	07	0	2⅛
985	3386	21	1	2½	938	3224	64	0	2
984	3382	77	1	2⅜	937	3221	20	0	1⅞
983	3379	34	1	2¼	936	3217	76	0	1¾
982	3375	90	1	2¼	935	3214	32	0	1⅝
981	3372	46	1	2⅛	934	3210	88	0	1½
980	3369	02	1	2	933	3207	45	0	1⅜
979	3365	58	1	1⅞	932	3204	01	0	1⅜
978	3362	15	1	1⅞	931	3200	57	0	1¼
977	3358	71	1	1¾	930	3197	13	0	1¼
976	3355	27	1	1½	929	3193	70	0	1⅛
975	3351	83	1	1½	928	3190	26	0	1
974	3348	40	1	1⅜	927	3186	82	0	0⅞
973	3344	96	1	1⅜	926	3183	38	0	0¾
972	3341	52	1	1¼	925	3179	94	0	0⅝
971	3338	08	1	1⅛	924	3176	51	0	0½
970	3334	64	1	1	923	3173	07	0	0½
969	3331	21	1	1	922	3169	63	0	0⅜
968	3327	77	1	0⅞	921	3166	19	0	0⅜
967	3324	33	1	0¾	920	3162	76	0	0¼
966	3320	89	1	0⅝	919	3159	32	0	0⅛
965	3317	46	1	0⅝	918	3155	88	0	0⅛
964	3314	02	1	0½	917	3152	44	St 0	0
963	3310	58	1	0⅜	916	3149	00	W 0	0½
962	3307	14	1	0¼	915	3145	57	0	0½
961	3303	70	1	0¼	914	3142	13	0	0⅜
960	3300	27	1	0⅛	913	3138	69	0	0⅜
959	3296	83	1	0	912	3135	25	0	0¼
958	3293	39	0	3⅞	911	3131	82	0	0
957	3289	95	0	3¾	910	3128	38	0	0
956	3286	52	0	3⅝	909	3124	94	0	0
955	3283	08	0	3⅝	908	3121	50	0	0
954	3279	64	0	3½	907	3118	06	0	1

TARIFF RATES AND BRITISH REPORTS FOR MILLIEMES OF GOLD.

Mill.	Fr.	C.		C.	gr.	Mill.	Fr.	C.		C.	gr.
906	3114	63	W	0	1⅛	859	2953	05	W	1	1½
905	3111	19		0	1¼	858	2949	61		1	1⅝
904	3107	75		0	1¼	857	2946	18		1	1¾
903	3104	31 ·		0	1½	856	2942	74		1	1⅞
902	3100	88		0	1½	855	2939	30		1	2
901	3097	44		0	1⅝	854	2935	86		1	2⅛
900	3094	00		0	1⅝	853	2932	42		1	2⅛
899	3090	56		0	1¾	852	2928	99		1	2¼
898	3087	12		0	1⅞	851	2925	55		1	2⅜
897	3083	69		0	2	850	2922	11		1	2⅜
896	3080	25		0	2	849	2918	67		1	2½
895	3076	81		0	2⅛	848	2915	24		1	2⅝
894	3073	27		0	2¼	847	2911	80		1	2⅝
893	3069	94		0	2⅜	846	2908	36		1	2¾
892	3066	50		0	2½	845	2904	92		1	3
891	3063	06		0	2½	844	2901	48		1	3
890	3059	62		0	2⅝	843	2898	05		1	3⅛
889	3056	18		0	2¾	842	2894	61		1	3⅛
888	3052	75		0	2⅞	841	2891	17		1	3⅜
887	3049	31		0	2⅞	840	2887	73		1	3⅜
886	3045	87		0	3	839	2884	30		1	3½
885	3042	43		0	3⅛	838	2880	86		1	3⅝
884	3039	00		0	3¼	837	2877	42		1	3⅝
883	3035	56		0	3¼	836	2873	98		1	3¾
882	3032	12		0	3⅜	835	2870	54		1	3⅞
881	3028	68		0	3½	834	2867	11		2	0
880	3025	24		0	3⅝	833	2863	67		2	0⅛
879	3021	81		0	3⅝	832	2860	23		2	0¼
878	3018	37		0	3¾	831	2856	79		2	0¼
877	3014	93		0	3⅞	830	2853	36		2	0½
876	3011	49		1	0	829	2849	92		2	0½
875	3008	06		1	0	828	2846	48		2	0⅝
874	3004	62		1	0⅛	827	2843	04		2	0⅝
873	3001	18		1	0¼	826	2839	60		2	0¾
872	2997	74		1	0⅜	825	2836	17		2	0⅞
871	2994	30		1	0⅜	824	2832	73		2	1
870	2990	87		1	0½	823	2829	29		2	1
869	2987	43		1	0⅝	822	2825	85		2	1⅛
868	2983	99		1	0⅝	821	2822	42		2	1⅛
867	2980	55		1	0¾	820	2818	98		2	1⅜
866	2977	12		1	0⅞	819	2815	54		2	1⅜
865	2973	68		1	1	818	2812	10		2	1½
864	2970	24		1	1⅛	817	2808	66		2	1⅝
863 ·	2966	80		1	1¼	816	2805	23		2	1¾
862	2963	36		1	1¼	815	2801	79		2	1¾
861	2959	93		1	1⅜	814	2798	35		2	1⅞
860	2956	49		1	1½	813	2794	91		2	2

TARIFF RATES AND BRITISH REPORTS FOR MILLIEMES OF SILVER.

Mill.	Fr.	C.	Dwts.	Mill	Fr.	C.	Dwts.
1000	220	00	B 18	953	209	66	B 6½
999	219	78	17¾	952	209	44	6¼
998	219	56	17½	951	209	22	6
997	219	34	17¼	950	209	00	6
996	219	12	17	949	208	78	5¾
995	218	90	16¾	948	208	56	5½
994	218	68	16½	947	208	34	5¼
993	218	46	16¼	946	208	12	5
992	218	24	16	945	207	90	4¾
991	218	02	15¾	944	207	68	4½
990	217	80	15½	943	207	46	4¼
989	217	58	15¼	942	207	24	4
988	217	36	15	941	207	02	3¾
987	217	14	14¾	940	206	80	3½
986	216	92	14½	939	206	58	3¼
985	216	70	14¼	938	206	36	3
984	216	48	14	937	206	14	2¾
983	216	26	13¾	936	205	92	2½
982	216	04	13½	935	205	70	2¼
981	215	82	13¼	934	205	48	2
980	215	60	13	933	205	26	1¾
979	215	38	12¾	932	205	04	1½
978	215	16	12½	931	204	82	1¼
977	214	94	12¼	930	204	60	1
976	214	72	12	929	204	38	0¾
975	214	50	12	928	204	16	0½
974	214	28	11¾	927	203	94	0¼
973	214	06	11½	926	203	72	St
972	213	84	11¼	925	203	50	St
971	213	62	11	924	203	28	W. 0¼
970	213	40	10¾	923	203	06	0½
969	213	18	10½	922	202	84	0¾
968	212	96	10¼	921	202	62	1
967	212	74	10	920	202	40	1¼
966	212	52	9¾	919	202	18	1½
965	212	30	9½	918	201	96	1¾
964	212	08	9¼	917	201	74	2
963	211	86	9	916	201	52	2¼
962	211	64	8¾	915	201	30	2½
961	211	42	8½	914	201	08	2¾
960	211	20	8¼	913	200	86	3
959	210	98	8	912	200	64	3¼
958	210	76	7¾	911	200	42	3½
957	210	54	7½	910	200	20	3¾
956	210	32	7¼	909	199	98	4
955	210	10	7	908	199	76	4¼
954	209	88	6¾	907	199	54	4½

TARIFF RATES AND BRITISH REPORTS FOR MILLIEMES OF SILVER.

Mill.	Fr.	C.	Dwts.	Mill.	Fr.	C.	Dwts.
906	199	32	W 4¾	859	188	98	W 16
905	199	10	5	858	188	76	16¼
904	198	88	5¼	857	188	54	16½
903	198	66	5½	856	188	32	16¾
902	198	44	5¾	855	188	10	17
901	198	22	6	854	187	88	17¼
900	198	00	6	853	187	66	17½
899	197	78	6¼	852	187	44	17¾
898	197	56	6½	851	187	22	18
897	197	34	6¾	850	187	00	18
896	197	12	7	849	186	78	18¼
895	196	90	7¼	848	186	56	18½
894	196	68	7½	847	186	34	18¾
893	196	46	7¾	846	186	12	19
892	196	24	8	845	185	90	19¼
891	196	02	8¼	844	185	68	19½
890	195	80	8½	843	185	46	19¾
889	195	58	8¾	842	185	24	1 0
888	195	36	9	841	185	02	1 0¼
887	195	14	9¼	840	184	80	1 0½
886	194	92	9½	839	184	58	1 0¾
885	194	70	9¾	838	184	36	1 1
884	194	48	10	837	184	14	1 1¼
883	194	26	10¼	836	183	92	1 1½
882	194	04	10½	835	183	70	1 1¾
881	193	82	10¾	834	183	48	1 2
880	193	60	11	833	183	26	1 2¼
879	193	38	11¼	832	183	04	1 2½
878	193	16	11½	831	182	82	1 2¾
877	192	94	11¾	830	182	60	1 3
876	192	72	12	829	182	38	1 3¼
875	192	50	12	828	182	16	1 3½
874	192	28	12¼	827	181	94	1 3¾
873	192	06	12½	826	181	72	1 4
872	191	84	12¾	825	181	50	1 4
871	191	62	13	824	181	28	1 4¼
870	191	40	13¼	823	181	06	1 4½
869	191	18	13½	822	180	84	1 4¾
868	190	96	13¾	821	180	62	1 5
867	190	74	14	820	180	40	1 5¼
866	190	52	14¼	819	180	18	1 5½
865	190	30	14½	818	179	96	1 5¾
864	190	08	14¾	817	179	74	1 6
863	189	86	15	816	179	52	1 6¼
862	189	64	15¼	815	179	30	1 6½
861	189	42	15½	814	179	08	1 6¾
860	189	20	15¾	813	178	86	1 7

NETHERLAND REPORTS.

The Netherland reports of both Gold and Silver are made in Millièmes fine, and they therefore bear the same relation to the British Standards as those of France.

The valuation of Gold is made from the fixed price of Florins 1442 60 Cents, per Netherland Pond, with an Agio or Premium that is usually about 13 or 14 per Cent.

The valuation of Silver is made from the fine weight, at a variable price per Pond without any Agio.

The Mint at Utrecht receives Gold at the fixed rate of Florins 1442 60 Cents without any Agio, and renders Ducats in return at the rate of 5 Florins each, which is so much under the usual market price of this Coin, as to fully compensate for the loss of the Agio.

In the valuation of either Gold or Silver, the practice is to cast out the fine weight, and to find its value either from the fixed price with the Agio for Gold, or from the market price for Silver.

Thus,   Ponden 6.802 of Gold 997 fine, at 14½ premium.
Ponden 6.802   ×   997 = Ponden 6.781,594
Florins 1442.60 × 6.781,594 =   Flor. 9783   13 Cents.
$$14\tfrac{1}{2} \text{ per Cent}   —   1418   55$$

Amount, Florins 11201   68 Cents.

Also, Ponden 11.408 of Silver 925 fine, at 104 50 Flor.
Ponden 11.408   ×   925 = Ponden 10.552,4
Florins 10.552,4 × 104.50 =   Florins 1102 73 Cents.

EXERCISES.

Ex. 1. Ponden 12.848 of Gold 911 fine, at 14½ premium.

2. Ponden 21.753 of Silver 896 fine, at 104.50 Florins.

3. What number of Ducats should be rendered for Ponden 31.828 of Gold reported 946 fine?

PRODUCTS.

Ex. 1. Florins 19291.06   Ex. 2. Florins 2036.68
          Ex. 3. Ducats 8687—66 Cents over.

GERMAN REPORTS.

The Assay Mark of 288 Grains is, throughout Germany, the Integer for Assays both of Gold and of Silver.

For Assays of Gold, the Assay Mark is divided into 24 Carats, each of 12 Grains, divided into quarter Grains.

For Assays of Silver, the Assay Mark is divided into 16 Loths, each of 18 Grains, divided into half Grains.

The practice of German Assayers, like that of the Assayers of every other Country than this, is to report the quantity of pure Gold or Silver which is contained in the integral weight of the assayed metal, and the valuation is made upon the fine weight, reduced from the full weight according to the Assay Report.

In the weighing of Gold and Silver, the Cologne Mark is, with the exception of Austria, the Integer employed. It is divided into 16 Loths, and it is seldom that greater precision is observed in the weighing of Bars or Ingots of Bullion, than to half-quarter Loths for Gold, or to half Loths for Silver.

In calculating the fine weight of the precious metals, the Loth is divided into 18 Grains, each of which is divided into sixteenths for Gold, but not lower than Grains for Silver. •

The weight of the Hamburg Standard of the Cologne Mark, given in page 238, is a little below the average of the standards of this weight in the different German States.—That of Prussia, now generally adopted in the States of the German Customs-Union, is 3609 Grains Troy. The Vienna Mark is 6-5ths of the Cologne Mark, and weighs 4331½ Grains Troy.

EXAMPLE 1.

To compare the German Gold-report of 23 Carats 11 Grains fine, with British Standard.

Directions.—The German Carats being reckoned as English Carats, divide the German Grains by 3, and if 1 remains call it $\frac{1}{4}$, or if 2, $\frac{1}{2}$ or $\frac{6}{8}$ of an English Grain ;* then find the difference between this purity and 22 Carats for the Betterness or Worseness.

$$\text{German} \quad \text{Car. 23 11 Gr.} \quad = 23 \quad 3\tfrac{6}{8} \quad \text{British.}$$
$$22 \quad 0 \quad \text{Standard.}$$

$$\text{Carat} \quad 1 \quad 3\tfrac{6}{8} \quad \text{Better}$$

EXAMPLE 2.

To compare the German Silver-report of 13 Loths 15 Grains fine, with British Standard.

Directions.—Take the difference between the given report and 14 Loths 14.4 Grs, which are equal to 11 Oz. 2 Dwts, the British Standard for Silver; then reduce, if necessary, the difference to Grains and 10 ths of Grains, and divide the result by 12 for the Betterness or Worseness in Dwts.

$$\begin{array}{rccc}
\text{Loths} & 14 & 14.4 & \text{Grs.} \\
\text{Given report} & 13 & 15 &
\end{array}$$

$$12 \;) \quad 17 \; 4 \quad \text{tenths of Grains.}$$

$$\text{Worse} \qquad 14\tfrac{1}{2} \; \text{Dwts.}$$

Observe, that in dividing by 12, if the remainder is not exactly half a Dwt, it is to be reckoned at the next lower $\frac{1}{2}$ Dwt for Betterness, and at the next higher, for Worseness.

---

* When the German report is made in half or quarter grains, multiply the remainder by 8 and divide the product by 3, for 8 ths of English grains.

Example 3.

To find the amount of sundry Bars of Gold, sold in Hamburg, weighing Mks 115 ·11¾ Loths, and reported Car. 21 11¼ Grs fine, with the Assay Pieces weighing 1⅜ Loths, at 430 Banco Marks, per fine Mark.

-Reductions.-

<table>
<tr><td colspan="4">Bars</td><td></td><td colspan="3">Assay Pieces</td></tr>
<tr><td>M.</td><td>l.</td><td>g.</td><td>16 ths</td><td></td><td></td><td colspan="2">gr. 16 ths.</td></tr>
<tr><td>115</td><td>11</td><td>6</td><td>12</td><td>1⅜ Loths =</td><td></td><td>24</td><td>12</td></tr>
<tr><td colspan="4"></td><td></td><td></td><td>2</td><td>1</td></tr>
<tr><td></td><td>9 10</td><td>5</td><td>1</td><td>for 2 Carats</td><td></td><td></td><td></td></tr>
<tr><td></td><td>4 14</td><td>13</td><td></td><td>— ¾ Gr</td><td></td><td>22</td><td>11</td></tr>
</table>

Col. Mks 105 12   4 14   — 21 C. 11¼ G.

———Valuations.———

<table>
<tr><td>B M.</td><td>Sc.</td><td></td><td></td><td></td><td>B.M.</td><td>Sc</td></tr>
<tr><td>430</td><td>0</td><td></td><td>For 18 Gr.</td><td></td><td>26</td><td>14</td></tr>
<tr><td></td><td>105</td><td></td><td>— 4½ Grs.</td><td></td><td>6</td><td>11½</td></tr>
<tr><td></td><td></td><td></td><td>— 3-16 ths</td><td></td><td></td><td>4⅛</td></tr>
<tr><td>45150</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>215</td><td>0</td><td>for 8 Loths</td><td>B. Mks</td><td></td><td>33</td><td>14</td></tr>
<tr><td>107</td><td>8</td><td>— 4 Loths</td><td></td><td></td><td></td><td></td></tr>
<tr><td>5</td><td>15</td><td>— 4 Grs</td><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td>5</td><td>— 14-16 ths</td><td></td><td></td><td></td><td></td></tr>
</table>

B.Mks 45479 12

STATEMENT OF THE WEIGHTS AND VALUATIONS

<table>
<tr><td></td><td colspan="2">Full Weight</td><td colspan="2">Report</td><td colspan="3">Fine Weight</td><td colspan="2">Value</td></tr>
<tr><td></td><td>M.</td><td>L.</td><td>C.</td><td>G.</td><td>M.</td><td>L.</td><td>G. 16ths</td><td>B.Mks</td><td>Sc.</td></tr>
<tr><td>Bars -</td><td>115</td><td>11¾</td><td>— 21</td><td>11¼ —</td><td>105</td><td>12</td><td>4 14</td><td>— 45479</td><td>12</td></tr>
<tr><td>AssayPs.</td><td></td><td>1⅜ —</td><td>—</td><td>—</td><td></td><td>1</td><td>4 11</td><td>— 33</td><td>14</td></tr>
<tr><td></td><td>115</td><td>13⅛</td><td></td><td></td><td>105</td><td>13</td><td>9 9</td><td>45513</td><td>10</td></tr>
</table>

EXAMPLE 4.

To find the amount of a bar of Silver, weighing Mks 49 14 Loths, reported 14 Loths 8 Grs fine, at 27 Mks 10 Sch. Bco. per Mark fine.

			M	l	g	
½	-	-	49	14	0	Full Weight.
½	-	-	24	15	0	Fine weight at 8 Loths.
½	-	-	12	7	9	- - 4 -
⅙	-	-	6	3	13	- - 2 -
⅓	-	-	1	0	11	- - 6 Grs.
				5	9	- - 2 -
Hamburg Marks			**45**	**0**	**6**	Fine weight.

			M	s	pf	
½	-	-	45	0	4	Value at 1 Bco. Mk.
				27		
			1215	9	0	for 27 Marks.
-	-		22	8	2	- 8 Sch.
			5	10	0	- 2 -
Banco Marks			**1243**	**11**	**0**	Amount required.

The Pfennings in the amount are reckoned at 6, when they are from 3 to 9; above that number they are called 1 Sch. and at 3 and under they are not reckoned.

EXERCISES.

Ex. 1. What is the amount of a Bar of Gold, weighing Mks 33 12¼ Loths, reported 22 Car. 6¼ Grs. fine, at 433½ Banco Marks per fine Mark ?

2. What is the amount of a Bar of Silver, weighing Mks 38 14½ Loths, reported 15 Loths 12 Grs fine, at Mks 27 12 Sc per Mark fine ?

PRODUCTS.

Ex. 1. Fine Wt. Mks 31   7   0 13   Value Mks 13629   6 Sc.

2. Fine Wt. Mks 38   1 10   — Mks   1057   3 Sc.

SPANISH REPORTS.

The Spanish Mark, which weighs 3550½ Grains Troy, is divided into 8 Ounces each of 8 Ochavos; the Ochavo is divided into 6 Tomines each of 12 Grains, the Mark containing 4608 Grains.

For the weighing of Gold, the Mark is divided into 50 Castellanos, each of 8 Ochavos or Tomines, and of 96 Grains, making the Mark of Gold to contain 4800 Grains, and 100 Grains in Gold Weight to be equal to 96 Grains in Silver Weight.

The Assay Integer or Mark is divided into 24 Quilates each of 4 Grains for Gold, and into 12 Dineros each of 24 Grains for Silver.

Gold is sold by the Spanish Ounce when direct from the Mine, or when no dependence can be placed upon the Assay. Otherwise, it is commonly sold by the Castellano, rating the purity for the price at 22 Quilates fine; or, when it forms a Ley (alloy, or rather mixture) with Silver, the Gold is rated as being pure, and is sold by the 4400 Grains, or 11-12 ths of the Mark of 4800 Grains.

Silver is sold when not essayed, as Plata Piña, by the Mark; and when assayed, from the fine weight, by the 264 Grains, or 11-12 ths of the Assay Mark of 288 Grains.

EXAMPLE I.

To value 453 Marks 4 oz. of Plata Piña, at 9 Dollars per Mark.

	Doll.	r.
	453	4
		9
Doll.	4081	4

Example 2.

To value a Bar of Silver with a Ley of Gold, at 8¼ Dollars per 264 Grains of Fine Silver, and 135¾ Dollars per 4400 Grains of Fine Gold, from the following report:—

	d.	g.		grs.			mks.	oz.	och.
Purity	11	11½	— Gold	109	— Weight		142	3	2.

Din. 11 11½ Grs. = 275¼ Grs.
Grs. 275¼ multiplied by 142 = Grs. 39121
       Add for 3 oz. 2 och.   -   111

                         Grs.   39232

Doll. 39232 mult. by 8¼, div. by 264   =   Doll. 1226.-.-.

Grs. 109 multiplied by 142 = Grs. 15478
        Add for 3 oz. 2 och.   -   -   44

                         Grs.   15522

Doll. 15522 mult. by 135¾, div. by 4400 = Doll. 478. 7.-.

					Doll.	r.	q
39232 Grs. of Silver at	8¼ Doll. per	264 grs. =	1226.-.-
15522 Grs. of Gold at	135¾ Doll. per	4404 grs. =	478. 7.-

                    Value.   Doll. 1704. 7.-.

N.B. The Spanish Reports of the purity of Gold are rendered into English Standard Reports, by converting the fineness into betterness or worseness, in comparison with 22 Quilates.

In the Spanish Reports of Silver, the Dineros answer to our Ounces, and the Grains are reduced into Pennyweights by deducting 1-6th of their number. They are then standarded by comparing the whole with 11 oz. 2 dwt.

To reduce Spanish Weights into English Troy Weights.

| 100 Marks | = | 61.6406 lb. Troy. |
| 100 Castellanos | = | 1.2328 lb. Troy. |

ARBITRATIONS OF BULLION.

ARBITRATED PARS OF EXCHANGE.

The calculations of arbitrated Pars of Exchange from Opera-
tions in Bullion, are conducted in a similar manner to the cal-
culations of arbitrated Rates from Bills of Exchange ; but be-
sides the prices in the two places concerned, they require the
further data of the relations between their weights for Gold
and Silver, and the degrees of fineness at which the prices are
reckoned.

In England the price of Bullion is rated at Standard fineness
for both Gold and Silver; but Doubloons, Dollars, and some
other Coins, when in large quantities, are usually valued at
variable prices per Oz. corresponding with their estimated
fineness.

When Pars of Exchange are formed from Coins, they are
usually reckoned from their mintage regulations, with regard to
weight and fineness, and from their value as money in each of
the two Countries ; but this valuation is but of little practical
utility, because, 1st, in this Country Gold is the established
medium of payment, and the Gold Coin cannot be sold at a
premium or discount ; whereas on the Continent, generally,
Gold is not the medium, and the Gold Coins are seldom cur-
rent at only the exact price legally or nominally given to them ;
—and, 2 ndly, with respect to Silver, the British mintage price,
66 d per Oz. is so high in comparison with the price that Stand-
ard Silver has borne in this Country for many years past, and it
is also so much higher in comparison with Gold than it is upon
the Continent, that it cannot with any propriety be used as one
of the terms for finding a par of exchange.— For these reasons

N. B. The calculations of Arbitrations of Bullion are divided
into Arbitrated Rates or Pars of Exchange and Arbitrated
Prices.

therefore, in all our valuations of this nature, we have used the mintage price only for Gold, and we have used the rate of 60 d. per Oz. Standard for Silver, both because it has long been its full market value in this country, and because it affords a very convenient fixed value, to be proportioned to any other price to which Silver may vary.

The relations between the Gold and Silver weight of this Country, and those of the chief Countries of Europe, have been given in the table, page 4, and the modes of valuation and their standards of fineness have been explained in the preceding pages, but as the former are hardly minute enough for our present object, it is necessary to state the absolute weight of each Integer, as is done in the introduction to each of the following departments, for the places selected for the operations, viz. :—

Paris — in Bar Gold and Silver, Doubloons and Dollars.

Amsterdam — the same.

Hamburg — the same.

Frankfort — the same, except Doubloons.

To each of the formulæ a fixed number* is first found, independent of either price, and then a fixed number for the assumed price per Ounce; and to facilitate the calculations at other prices a table is given at the foot of each formula, for the prices within the usual extreme limits of the fluctuations, for each of the first four places, but they are omitted to the remaining formulæ, as being for places with which this Country transacts but little business of this nature.

---

* As before directed, the fixed number is formed by multiplying the numbers of the fixed terms on each side of the Equation together, and dividing the product of the consequences (the right-hand terms) by the product of the antecedents.

The variable terms are, as before, marked with an Asterisk.

PARIS.

The Gold and Silver weight is the Kilogramme of 1000 Grammes : it is equal to 15432.348 Grains English Troy Weight, making the Oz. Troy of 480 Grains equal to 31.10349 Grammes. Hence,

1000 Oz. British Standard Gold = Kilogr 28.5115 F. Gold
1000 Oz. British Standard Silver =   —   28.7707 F. Silv.
1000 Oz. Doll. Worse 7 Dwts =   —   27 8634 Ditto.
            7½ Dwts =   —   27.7987 Ditto.
            8 Dwts =   —   27.7340 Ditto.

The British Standard for Gold has no exact Tariff Price, but as being 11-12 ths fine, it may be rated at 3150.58 Francs.

Bar Silver at the British Standard purity of 37-40 ths, or 925 fine, is tariffed at 204.01 Francs per Kilogramme.

Dollar Silver is usually rated as being 896 fine, (7 Dwts Worse,) at 197.12 Francs per Kilogramme.—For any other degree of purity from 890 to 902 fine, a correction to this rate is to be applied from the table, page 231, according to the method of the example there given.

Dollars are also sold in Paris by the piece, for which there is a separate formula.

In applying the Charges or comparing the Rates,
25¼ or 24 Cents are reckoned 1 per Cent.
22   — 21 — . . . . $\frac{7}{8}$ —
19   — 18 — . . . . $\frac{3}{4}$ —
15½ — 15 — . . . . $\frac{5}{8}$ —
12¼ — 12 — . . . . $\frac{1}{2}$ —
9½   —   9 — . . . . $\frac{3}{8}$ —
6¼   —   6 — . . . . $\frac{1}{4}$ —
         3 — . . . . $\frac{1}{8}$ —

PARIS.

Bar Gold in London is 77 s 6 d per Oz. Standard ; in Paris, 1½ per Mille Premium ; required the arbitrated Rate or Par of Exchange.

		20	Shillings ?
77½ *	—	1	Oz. Standard.
1	—	31.1035	Grammes.
1000	—	3150.58	Frs. and Cts.
1000	—	* 1004½	With Premium.

77½	)	1959.976	Fixed Number.
		25.290	Do. for 77 s 6d.
2529 × 4 =		−.101	Prem. 4 per Mille.
		−.013	— ½ —

Francs 25.40,4 Centimes.

Fixed Numbers for Prices per Oz.

s	d					
77	6	.	.	.	.	25.290
–	9	.	.	.	.	−.209
–	10½	.	.	.		−.169
78	–	.	.	.	.	−.129
–	3	.	.	.	.	−.048
–	6	.	.	.	.	24.968

PARIS.

Doubloons in London are 75 s 3 d per Oz ; in Paris, Frs 82 35 Cents each ; required the arbitrated Rate of Exchange.

		20	Shillings ?
75¼	* —	1	Ounce.
868	—	1000	Doubloons
1	—	* 82.35	Francs.

75¼	)	230414	Fixed Number.
		30620	Ditto for 75 s 3 d
Multiply by		82.35	
Francs		25 21,5	Cents.

~~~~~~~~

Fixed Numbers for Prices per Oz.

---

s	d				s	d			
73	-	.	.	31564	76	-	.	.	30318
-	3	.	.	- 456	-	3	.	.	- 218
-	6	.	.	- 349	-	6	.	.	- 119
-	9	.	.	- 243	-	9	.	.	- 021
74		.	.	- 137	77	-	.	.	29924
-	3	.	.	- 032	-	3	.	.	- 827
-	6	.	.	30928	-	6	.	.	- 731
-	9	.	.	- 825	-	9	.	.	- 635
75	-	.	.	- 722	78	-	.	.	- 540
-	3	.	.	- 620	-	3	.	.	- 440
-	6	.	.	- 518	-	6	.	.	- 352
-	9	.	.	- 418	-	9	.	.	- 259

PARIS.

Bar Silver in London is 59½ d per Oz. Standard; in Paris, 4 per Mille Premium; required the arbitrated Rate of Exchange.

		240	Pence ?
59½ *	—	1	Oz. Standard.
1	—	31.1035	Grammes.
1000	—	204.01	Francs.
1000	—	* 1004	With Premium.

59½	)	1522.902	Fixed Number.
		25.595	Do. for 59½ d.
255	× 4 =	.102	Prem. 4 per Mille.
Francs		25.69,7	Centimes.

Fixed Numbers for Prices per Oz.

d				d			
59 ½	.	.	25.595	60 ¾	.	.	25.068
– ⅝	.	.	– .541	– ⅞	.	.	– .017
– ¾	.	.	– .487	61 –	.	.	24.966
– ⅞	.	.	– .435	– ⅛	.	.	– .915
60 –	.	.	– .382	– ¼	.	.	– .864
– ⅛	.	.	– .330	– ⅜	.	.	– .813
– ¼	.	.	– .277	– ½	.	.	– .762
– ⅜	.	.	– .225	– ⅝	.	.	– .711
– ½	.	.	– .172	– ¾	.	.	– .662
– ⅝	.	.	– .120	– ⅞	.	.	– .612

PARIS.

Dollars in London are 57½ d per Oz.; in Paris, Frs. 5.30 each; required the arbitrated Rate of Exchange

		240	Pence ?
57½	* —	1	Ounce.
866	—	1000	Dollars.
1	—	* 5.30	Francs.

57½	)	277136	Fixed Number.
		48198	Do. for 57½ d
		530	
		14459	
		24099	
Francs		25 54,5	Cents.

~~~~ ~

Fixed Numbers for Prices per Oz.

d				d			
58 -	.	.	47782	59 ⅝	.	.	46480
- ⅛	.	.	- 679	- ¾	.	.	- 382
- ¼	.	.	- 577	- ⅞	.	.	- 286
- ⅜	.	.	- 475	60 -	.	.	- 188
- ½	.	.	- 374	- ⅛	.	.	- 094
- ⅝	.	.	- 273	- ¼	.	.	45997
- ¾	.	.	- 172	- ⅜	.	.	- 905
- ⅞	.	.	- 072	- ½	.	.	- 808
59 -	.	.	46972	- ⅝	.	.	- 713
- ⅛	.	.	- 871	- ¾	.	.	- 619
- ¼	.	.	- 770	- ⅞	.	.	- 525
- ⅜	.	.	- 677	61 -	.	.	- 432
- ½	.	.	- 577	- ⅛	.	.	- 339

PARIS

Dollars in London are 57½ d per Oz.; in Paris, 4 per Mille Premium . required the arbitrated Rate of Exchange.

		240	Pence ?
57½ *	—	1	Ounce.
1	—	31.1035	Grammes.
1000	—	197.12	Francs.
1000	—	* 1004	With Premium.

57½	)	1471.469	Fixed Number.

		25.590	Do. for 57½ d.
255	× 4 =	.102	Prem. 4 per Mille.
	Francs	25.69	Centimes.

Fixed Numbers for Prices per Oz. at 896 Fine.

d				d			
58 –	.	.	25.369	59 ⅝	.	.	24.678
			– .315	– ¾			– .627
– ¼	.	.	– .261	– ⅞	.	.	– .575
⅜	.	.	– .207	60 –	.	.	– .524
			– .153	– ⅛			.474
			– .099	– ¼			.423
– ¾	.	.	– .046	– ⅜	.	.	– .373
			24.992	– ½			.322
59	.	.	– .939	– ⅝	.	.	– .272
			– .886	– ¾			.222
			– .833	– ⅞			.172
– ¼	.	.	– .782	61 –	.	.	– .122
– ½	.	.	– .730	– ½	.	.	23.926

DOLLAR SILVER AT PARIS.

Table of Parts for Purities from 890 to 902 Fine.

Subt for	d 58	d 58¼	d 59	d 59¼	d 60	d 60¼	Add for
890	169	168	166	164	163	161	902
891	141	140	139	138	138	137	901
892	113	112	111	110	110	109	900
893	85	84	83	83	82	81	899
894	56	56	55	55	54	54	898
895	28	28	28	27	27	26	897

Example

Of the application of this Table

Dollar Silver, reported 893 Fine.

London Price, 57½ d per Oz. — Paris, 4 per Mille.

By the preceding Table for 896 fine,
the Fixed Number for 57½ d is   .   25.590
Subtract as above for 893   .   .   .   85

                                     25.505*
                    4 per Mille   .   102

                         Francs   25 603

---

* The same result is obtained by working this Equation.

		240	Pence ?
57½ *	—	1	Oz Dollar Silver.
1	—	31 1002	Grammes.
1000		* 893	Fine
900		198	Francs.

Result, Francs 25.50,5   Centimes.

AMSTERDAM.

The Netherland Pond is of the same weight as the French Kilogramme, viz. 15432 Grains, or 2 lb 8 oz. 3 dwts 0 grs Troy, and it is similarly divided into 1000 equal parts called Wigties or Grammes; hence the same relations exist between the British and Netherland Weights of Standard and fine Gold, and Silver, as those given in page 225.

Also as the Mint at Utrecht receives the Pond of fine Gold at the fixed price of Florins 1442.60, and delivers Ducats in return at the fixed price of 5 Florins each,

1000 Oz of British Standard Gold produce 8225.269 Ducats.

Doubloons bought in London at variable prices per Oz. are usually melted into Bars before they are sold at Amsterdam— Spanish Doubloons from 1 Car. 0¾ Gr. Worse to 1 Car. 0½ Gr. Worse, generally render about 867 fine; the Formula and fixed Numbers are therefore calculated for this purity, variations being estimated in the manner directed page 235.

In estimating the Charges and the differences in the Rates.

12	Cents	or	2.4	Stivers	are	1 per Cent.
10½	—	.	2.1			
9	—	.	1.8			
7½	--	.	1 5			
6	—	.	1.2			
4½	—	.	- 9			
3	—	.	- 6			
1½	—	.	-.3			

N. B. The Florin in the Netherlands Rate being divided into 100 Cents, and in the London Rate into Stivers, the Cents in the arbitrated Rates must be divided by 5, if it is required to express them in Stivers.

AMSTERDAM.

Bar Gold in London is 77 s 6 d per Oz. Standard; in Amsterdam, 14 per Cent. Premium; required the arbitrated Rate of Exchange.

		20	Shillings ?
77½	—	1	Oz. Standard.
12	—	11	Fine.
1	—	31.1035	Wigties.
1000	—	1442.60	Florins.
100	—	* 114	With Premium.

77½	)	822615	Fixed Number.
		10.614	Do. for 77 s 6 d.
		1.061	Premium 10 per Cent.
		.425	— 4 —

Florins 12 10.0 Cents.

Fixed Numbers for Prices per Oz.

s	d	
77	6	10.614
–	9	- .580
–	10½	- .563
78	–	- .546
–	3	- .512
–	6	- .479
–	9	- .446

AMSTERDAM.

Doubloons in London are 75 s 3 d per Oz.; in Amsterdam, 14 per Ct. Premium; required the arbitrated Rate of Exchange.

		20	Shillings ?
75¼	* —	1	Oz. Doubloon Gold.
1000	—	867	Fine.
1	_ —	31.1035	Wigties.
1000	—	1442.60	Florins.
100	— *	114	Florins.
75¼	)	778044	Fixed Number.
		10.339	Do for 75 s 3 d.
		1.034	Prem. 10 per Cent.
		.413	— 4 —
Florins		11 78 6	Cents

Fixed Numbers for Prices per Oz. at 867 Fine.

s	d				s	d			
73	–	.	.	10658	76	–	.	.	10237
–	3	.	.	– 622	–	3	.	.	– 204
–	6	.	.	– 586	–	6	.	.	– 170
–	9	.	.	– 5.0	–	9	.	.	– 137
74	–	.	.	– 514	77	–	.	.	– 104
–	3	.		– 479	–	3	.	.	– 072
–	6	.	.	– 443	–	6	.	.	– 039
–	9	.	.	– 408	–	9	.	.	– 007
75	–	.	.	– 374	78	–	.	.	9975
–	3	.	.	– 339	–	3	.	.	– 943
–	6	.	.	– 305	–	6	.	.	– 911
–	9	.	.	– 271	–	9	.	.	– 880

DOUBLOON GOLD AT AMSTERDAM.

Table of Parts for Purities from 860 to 874.

Subt. for	s 73	s 74	s 75	s 76	s 77	s 78	Add for
860	86	85	84	83	82	81	874
861	74	73	72	71	70	69	873
862	61	61	60	59	58	58	872
863	49	48	48	47	47	46	871
864	37	36	36	35	35	35	870
865	25	24	24	24	23	23	869
866	12	12	12	12	12	12	868

EXAMPLE

Of the application of this Table

Columbian Doubloons, reported 861 Fine.

London Price, 73 s 8 d — Amsterdam, 14 per Ct.

By the preceding Table

73 s 8 d and 867 fine 10.561

By the above — 861 fine 73

	10.488 *
10 per Cent.	1.049
4 per Cent.	.420
Florins	11.95,7

* The Equation for the above is

	20	Shillings	?
73 8	—	1	Oz. Doubloon Gold.
1000	—	861	Fine.
1	—	31.1035	Wigties.
1000	—	1442.60	Florins.
100	—	114	Florins.

Result 11.95,7 as above.

AMSTERDAM.

Bar Silver in London is 59½ d per Oz. Standard; in Amsterdam, 103¾ Florins per Pond Fine; required the arbitrated Rate of Exchange.

		240	Pence ?
59½ *	—	1	Oz. Standard.
40	—	37	Fine.
1	—	31.1035	Wigties.
1000	—	* 103¾	Florins.
59½	)	690.498	Fixed Number.
		11.605	Do. for 59½ d.
116 × 3		.348	for 3 Florins.
1–4 th		.087	¾ —

Florins   12 04,0   Cents.

Fixed Numbers for Prices per Oz.

d		d	
59 ½	11.605	60 ¾	11.366
– ⅜	.580	– ⅞	.343
– ¼	.556	61 –	.319
– ⅞	.532	– ⅛	.296
60 –	.508	– ¼	.273
– ⅛	.484	– ⅜	.250
	.460	– ½	.227
	.437	– ⅝	.205
– ½	.413	– ¾	.181
– ⅝	.389	– ⅞	.159

AMSTERDAM.

Dollars in London are 57½ d per Oz. ; in Amsterdam, 2.50 Florins each ; required the arbitrated Rate of Exchange.

		240	Pence ?
		1	Oz
866		1000	Dollars.
1		* 2.50	Florins.
7½	)	277136	Fixed Number.
		48198	Do for 57½ d
Multiply by		2.50	
	Florins	12 04,9	Cents.

Fixed Numbers for Prices per Oz.

---

d		d	
58-	47782	59 ⅝	46480
- ⅛	- 679	- ¾	- 382
- ¼	- 577	- ⅞	- 286
- ⅜	- 475	60 -	- 188
- ½	- 374	- ⅛	- 094
- ⅝	- 273	- ¼	45997
- ¾	- 172	- ⅜	- 905
- ⅞	- 072	- ½	- 808
59-	46972	- ⅝	- 713
- ⅛	- 871	- ¾	- 619
- ¼	- 770	- ⅞	- 525
- ⅜	- 677	61 -	- 432
	- 577	- ⅛	- 339

HAMBURG.

The Gold and Silver weight is the Cologne Mark, which, according to the Standard of the Hamburg Bank, is equal to 3608 Grains, or 7 Oz. 10 Dwts. 8 Grs. English Troy, making 60 Marks equal to 451 Oz. Troy.

Hence,

10 Col. Mks Fine Gold = 82 Oz. British Stand. Gold.

8 Col. Mks Fine Silver = $65\frac{1}{11}$ Oz. British Stand. Silver.

It is, however, not necessary to regard the fraction in the latter of these equations, when it is used in formulæ for Pars of Exchange, because the difference which it makes is less than the 32nd part of a Schilling.

In the formula for Doubloons, the prices are taken for Doubloon Gold in London, and for Bar Gold at Hamburg; the purity is reckoned at 20 Carats 9¾ Grs Fine, which estimate is the same as Worse Car. 1 0¾ Gr, and other degrees of purity are calculated from the Table of parts.*

Dollar Silver is sold per Mark weight gross; it was formerly per Mark fine. taking Dollar Silver generally at 14 Loths 5 Gis fine.

Instead of fixed numbers for the formula for Silver, the quotient of the division by the number of Pence per Oz. is multiplied by 27½, and the result, valued in Marks and Schillings, is the rate of Exchange at 27 Marks 8 Sch. per Hamburg Mark Fine; to which are to be added, the Schillings and parts taken from the auxiliary Table, for the excess of the price above 27 Mks 8 Sch.

In estimating the Charges and Differences in the rates of Exchange, taking 13 Mks 8 Sch. as an average rate:

Schillings	2 16-100 ths	are	1	per Cent.
	1 89 —	—	$\frac{7}{8}$	—
	1.62 —	—	$\frac{3}{4}$	—
	1.35 —	—	$\frac{5}{8}$	—
	1.08 —	—	$\frac{1}{2}$	—
	0.81 —	—	$\frac{3}{8}$	—
	0.54 —	—	$\frac{1}{4}$	—
	0.27 —	—	$\frac{1}{8}$	—

* The French method of making reports by Milliemes is now generally used.

HAMBURG.

Bar Gold in London is **77** s **6** d per Oz. Standard ; in Hamburg **438** Bco Mks per fine Mark ; required the arbitrated Rate of Exchange.

		20	Shillings ?
77½ *	—	1	Oz. Standard.
82	—	10	Marks Fine.
1	—	* 438	Bco Marks.

77½	)	2.439024	Fixed Number.
		0 031471	Do. for **77** s **6** d
		438	
		251768	
		94413	
		125884	

Bco Mks   13 7842 = Bco Mks 13 12 54 Sch.

Fixed Numbers for Prices per Oz

s	d					
77	6	.	.	.	.	31471
-	9	.	.	.	.	31370
-	10½	.	.	.	.	31320
78	-	.	.	.	.	31270
-	3	.	.	.	.	31170
-	6	.	.	.	.	31070
-	9	.	.	.	.	30972

HAMBURG.

Doubloons in London are 74 s 6 d per Oz.; in Hamburg, as Bar Gold, 438 Bco Mks per fine Mark; required the arbitrated Rate of Exchange.

		20	Shillings ?
74½	*	1	Oz.
451		60	Cologne Marks
Carats 24		20 9¾	Fine. (*See page* 238.)
1		* 438	Banco Marks.
74½	)	2.307372	Fixed Number.
		0.030972	Do. for 74 s 6 d
		438	

247776
92916
123888

Bco Mks   13 5656 = Bco Mks 13 9.06

Fixed Numbers for Prices per Oz.

s	d				s	d			
73	-	.	.	31608	76	-	.	.	30360
-	3	.	.	31501	-	3	.	.	30261
-	6	.	.	31395	-	6	.	.	30163
-	9	.	.	31288	-	9	.	.	30064
74	-	.	.	31181	77	-	.	.	29967
-	3	.	.	31076	-	3	.	.	29870
-	6	.	.	30972	-	6	.	.	29774
-	9	.	.	30868	-	9	.	.	29678
75	-	.	.	30765	78	-	.	.	29583
-	3	.	.	30663	-	3	.	.	29488
-	6	.	.	30562	-	6	.	.	29394
-	9	.	.	30461	-	9	.	.	29301

Table of parts from 20 Carats 7 Grs to 21 Carats.

Subt. for	73 s	74 s	75 s	76 s	77 s	78 s	
$7\frac{1}{2}$ Grs	284	281	277	274	270	267	12-
$-\frac{3}{4}$	253	250	246	243	240	237	
8-	222	218	215	212	210	207	
$-\frac{1}{4}$	190	187	185	182	180	178	$-\frac{1}{4}$
$-\frac{1}{2}$	158	156	154	152	150	148	
$-\frac{3}{4}$	127	125	123	122	120	119	
9-	95	94	92	92	90	89	
$-\frac{1}{4}$	63	62	62	61	60	59	
$-\frac{1}{2}$	32	31	31	31	30	30	

EXAMPLE
Of the Application of this Table.

Columbian Doubloons, reported 20 Carats $8\frac{3}{4}$ Grs Fine.
London, 73 s 10 d.—Hamburgh, 438 Bco Marks.
By the preceding Table of Fixed Numbers

73 s 10 d	. .	Carats 20 $9\frac{3}{4}$ Grs	. .	31252
By the above Subt. for	. .	$8\frac{3}{4}$ Grs	. .	125

$$31127$$
$$438$$

$$249016$$
$$93381$$
$$124508$$

Bco Mks 13 10.13 Sch. = Bco Mks 13.633

The Equation for the above gives the same result.

		20	Shillings ?
73 s 10 d	—	1	Oz St.
451	—	60	Cologne Mks.
	—	20 $8\frac{3}{4}$	Fine. ·
Col. Mk 1	—	438	Bco Mks.
Result, Bco Mks 13.633		=	Bco Mks 13 10.13 Sch.

HAMBURG.

Dollar Silver in London is 60 d per Oz.; in Hamburg, 24 Mks 14 Sch. per Hamburg or Cologne Mark; required the arbitrated Rate of Exchange.

$$
\begin{array}{rl}
 & 240 \quad \text{Pence.} \\
60 * \quad — & 1 \quad \text{Oz.} \\
451 \quad — & 60 \quad \text{Cologne Marks.} \\
1 \quad — & 24 \ 14 \quad \text{Mks and Sch.}
\end{array}
$$

60)   3192904   Fixed Number.

————————

532150   Do. for 60 d.

Mks   13   3.80 Sch.

Fixed Numbers for Prices per Oz.

d					d				
58 $\frac{1}{2}$	.	.	.	54579	59 $\frac{3}{4}$	.	.	.	53437
- $\frac{5}{8}$	.	.	.	463	- $\frac{7}{8}$	.	.	.	326
- $\frac{3}{4}$	.	.	.	347	60 -	.	.	.	215
- $\frac{7}{8}$	.	.	.	232	- $\frac{1}{8}$	.	.	.	105
59 -	.	.	.	117	- $\frac{1}{4}$	.	.	.	52994
- $\frac{1}{8}$	.	.	.	002	- $\frac{3}{8}$	.	.	.	884
- $\frac{1}{4}$	.	.	.	53888	- $\frac{1}{2}$	.	.	.	775
- $\frac{3}{8}$	.	.	.	775	- $\frac{5}{8}$	.	.	.	666
- $\frac{1}{2}$	.	.	.	663	- $\frac{3}{4}$	.	.	.	558
- $\frac{5}{8}$	.	.	.	550	- $\frac{7}{8}$	.	.	.	450

Bar Silver in London is 59½ d per Oz. Standard ; in Hamburg, 27 Mks 11 Sch per Hamburg or Cologne Mark Fine ; required the arbitrated Rate of Exchange.

$$
\begin{array}{rcl}
 & 240 & \text{Pence} \quad ? \\
59\tfrac{1}{2}\,* \quad - & 1 & \text{Oz. Standard.} \\
65\,\text{r} \,|\,\text{r} \quad - & 8 & \text{Cologne Marks Fine.} \\
1 \quad - & *\,27\ 11 & \text{Mks and Sch.}
\end{array}
$$

$$
\begin{array}{ll}
295343 & \text{Fixed Number.} \\
27\tfrac{1}{2} &
\end{array}
$$

$$
59\tfrac{1}{2} \quad) \quad 812195 \qquad \text{Do. for } 27\tfrac{1}{2} \text{ Marks.}
$$

$$
\begin{array}{rcl}
13\ 10.41 & - & 59\tfrac{1}{2}\ \text{d.} \\
1.49 & - & 3\ \text{Sch.}
\end{array}
$$

Mks   13 11.90 Sch.

Fixed Numbers or Rates of Exchange for 27 Mks 8 Sch.

d		Mks	Sc	d		Mks	Sc
59 $\frac{1}{2}$	. .	13	10.41	60 $\frac{3}{4}$	. .	13	5.91
- $\frac{5}{8}$	. .	-	9.95	- $\frac{7}{8}$	. .	-	5.47
- $\frac{3}{4}$	. .	-	9.49	61 -	. .	-	5.02
- $\frac{7}{8}$	. .	-	9.04	- $\frac{1}{8}$	. .	-	4.59
60 -	. .	-	8.59	- $\frac{1}{4}$	.	-	4.16
- $\frac{1}{8}$	. .	-	8.14	- $\frac{3}{8}$	. .	-	3.73
- $\frac{1}{4}$	. .	-	7.69	- $\frac{1}{2}$	. .	-	3 29
- $\frac{3}{8}$	. .	-	7.24	- $\frac{5}{8}$	. .	-	2 86
- $\frac{1}{2}$	. .	-	6.79	- $\frac{3}{4}$	. .	-	2 44
- $\frac{5}{8}$	. .	-	6.35	- $\frac{7}{8}$	. .	-	2.02

Average Parts for

at	4 Sc.	3 Sc.	2 Sc.	1 Sc.	$\frac{1}{2}$ Sc.	$\frac{1}{4}$ Sc.
59 d —	2.00	1.50	1.00	0.50	0.25	0.12
59 $\frac{1}{2}$ —	1.99	1.49	0.99	0.50	0.25	0.12
60 —	1.97	1.48	0 98	0.49	0.25	0.12
60 $\frac{1}{2}$ —	1.95	1.46	0 97	0.48	0.24	0.12
61 —	1.93	1.45	0 96	0.48	0.24	0.12

FRANKFORT.

The Cologne Mark now in use in Frankfort as the Money-Mark weight is that of the Prussian Standard, and weighs 3609 Grains Troy, and is the one used in the following formulæ.

The former Frankfort Mark of 3611 Grains is still sometimes used in making these calculations, the difference in the results of the two being too small to be of any consequence.

The Rate of Exchange is in the Süddeutsche Währung. The Florin is divided into 60 Kreuzers.

In estimating the Charges and Differences in the Rates of Exchange, taking 120 Florins as the rate,

$$
\begin{array}{llll}
1.20 \text{ Florins} & \text{are} & 1 & \text{per Cent.} \\
1.05 \quad — & — & \tfrac{7}{8} & — \\
.90 \quad — & — & & \\
.75 \quad — & — & & \\
.60 \quad — & — & & \\
.45 \quad — & — & & \\
.30 \quad — & — & & \\
.15 \quad — & — & &
\end{array}
$$

FRANKFORT.

Bar Gold in London is 77 s 6 d per Oz. Standard; in Frankfort, 374 Florins per Mark Fine; required the arbitrated Rate of Exchange.

```
          200  Shillings?                 200 Shillings?
 77½ * —     1  Oz. Stand.    77½ * —      1 Oz. Standard
 12     —   11  Fine    (or)   12    —    11 Fine
1200    —  159½ Marks           1    —   480 Grains
  1     — *374  Florins      3609    — *374 Florins


        77½ ) 243835   Fixed Number
               ─────────
               31462   do. for 77 s 6 d
        Multiply by    374


        Florins   117  40 Kr.
```

Fixed Numbers for Prices per Oz.

s	d					
77	6	.	.	.	.	31462
-	9	.	.	.	.	- 361
-	10½	.	.	.	.	- 311
78	-	.	.	.	.	- 261
-	3	.	.	.	.	- 161
-	6	.	.	.	.	- 062
-	9	.	.	.	.	30953

FRANKFORT.

Bar Silver in London is 60 d per Oz. Standard; in Frankfort Florins 24 30 Kr. S. W. D. per Mark Fine; required the arbitrated Rate of Exchange.

	`	2400	Pence ?
60 *	—	1	Oz. Standard
40	—	37	Fine
1	—	480	Grains
3609	— *	24 30	Flor. and Kreuz.

60	)	295261	Fixed Number

	49210	do. for 60 d
	24½	

Florins 120 25 Kr.

Fixed Numbers for Prices per Oz.

d		60 $\frac{3}{4}$	
59 $\frac{1}{2}$	49624	60 $\frac{3}{4}$	- 48603
- $\frac{5}{8}$	- 519	- $\frac{7}{8}$	- 503
- $\frac{3}{4}$	- 416	61 -	- 403
- $\frac{7}{8}$	- 313	- $\frac{1}{8}$	- 304
60 -	- 210	- $\frac{1}{4}$	- 205
- $\frac{1}{8}$	- 108	- $\frac{3}{8}$	- 107
- $\frac{1}{4}$	- 008	- $\frac{1}{2}$	- 010
- $\frac{3}{8}$	48905	- $\frac{5}{8}$	47913
- $\frac{1}{2}$	- 803	- $\frac{3}{4}$	- 815
- $\frac{5}{8}$	- 703	- $\frac{7}{8}$	- 719

FRANKFORT.

Dollars in London are 60 d per Oz.; in Frankfort, Flor. 2 30 Kr. in S. D. W. each; required the arbitrated Rate of Exchange.

$$
\begin{array}{rll}
 & 2400 & \text{Pence} \quad ? \\
60 \quad * \quad - & 1 & \text{Oz.} \\
866 \quad - & 1000 & \text{Dollars} \\
1 \quad * & 2 \ 30 & \text{Fl. and Kr.} \\
\hline
60 \quad) & 277136 & \text{Fixed Number} \\
\hline
 & 46189 & \text{do. for 60 d} \\
 & 2 & \\
\hline
 & 92378 & \text{for 2 Florins} \\
 & 23094 & - \ 30 \ \text{Kreuz.} \\
\end{array}
$$

Florins 115 22 Kr

Fixed Numbers for Prices per Oz.

d		d			
58 -	47782	59 $\frac{5}{8}$	.	.	46480
- $\frac{1}{8}$	- 679	- $\frac{3}{4}$	.	.	- 382
	- 577	- $\frac{7}{8}$	.	.	- 286
- $\frac{3}{8}$	- 475	60-	.	.	- 190
	- 374	- $\frac{1}{8}$	.	.	- 093
	- 272	- $\frac{1}{4}$	.	.	45998
	- 172	- $\frac{3}{8}$	.	.	- 902
- $\frac{7}{8}$	- 072	- $\frac{1}{2}$	.	.	- 807
59-	46972	- $\frac{5}{8}$	.	.	- 714
	- 873	- $\frac{3}{4}$	.	.	- 619
	- 774	- $\frac{7}{8}$	.	.	- 526
	- 676	61-	.	.	- 432
	- 578	- $\frac{1}{8}$	.	.	- 339

EXAMPLES

Of finding an arbitrated par of Exchange by the preceding Tables.

Example 1.

BAR GOLD FROM LONDON TO PARIS.

The price of Bar Gold in London being **77** 9, and in Paris 7¾ Premium, it is required to find the net arbitrated Par of Exchange, allowing ⅝ per Cent for extra charges; and the rate of Exchange for Bills in return being 25 12½, it is required to find the Profit or Loss per Cent, allowing ₁⁄₁₆ per Cent for Brokerage and ⅛ per Cent for loss of Interest.

The fixed Number, page 226,

for 77 s 9 d is - - - -	25 210
7 per Mille - - - -	.176
½ — — - - - -	12
	6
Full Rate - - - -	25.404
⁵⁄₈ per Cent	.158
Net Rate - - - - - - -	25.246
	25
	31
Net Proceeds - - - - - -	25.190
Rate of the Bill - - - - -	25 125
Profit - - - - - - - -	.065

65 Millièmes on 25.125 Francs are about 1-4th per Cent.

Example 2.

BAR GOLD FROM PARIS TO LONDON.

The price of Bar Gold in London being **77 10½** per Oz , and in **Paris 7** per Mille Premium, it is required to find the net arbitrated Rate of Exchange, charging ⅝ per Cent for extra expenses; and if the amount is drawn for from Paris in short Bills at **25.30** Francs, what is the Profit or Loss per Cent, charging $\frac{1}{10}$ and ⅛ per Cent for Brokerages on Bills in Paris and Sales in London.

Fixed No. page 226, for 77 s 10½ d - -	25 170
7 per Mille - -	.176
Net Rate - - - - - - -	25 346
$\frac{5}{8}$ - - - - -	.158
Full Rate - - - - - - -	25.504
$\frac{1}{10}$ per Cent - -	25
$\frac{1}{8}$ — - - -	31
Full Amount - - - - - -	25.560
Rate of Exchange - - - - -	25 30
Loss - - - - - Centimes	.26

26 Centimes on 25.30 Francs are 1 per Cent.

N B. When the Rate of Exchange is in Sterling, as with Petersburg, the application of the charges is the reverse of what it is with the rate in Foreign money ; they are then added for the export and deducted for the import.

With respect to the Interest it is to be observed, that when the Bills are drawn from abroad, for Bullion imported into this Country, at a distant date as 2 or 3 months, there will be a profit to allow for, or to deduct from the full amount, equal to the interest for the estimated time between the sale of the Bullion, and the day of the Bills becoming due ; thus sometimes when the result would be, as above, a loss, the advantage that is made of the money during this time repays it and leaves a profit.

EXERCISES

ON ARBITRATED PARS OF EXCHANGE,

AND THE

PROFIT AND LOSS ON BULLION OPERATIONS.

Ex. 1. From the following prices of Gold and Silver in London and Paris, it is required to find the net arbitrated Pars of Exchange, allowing all the extra charges to be $\frac{1}{2}$ per Cent upon Gold, and $\frac{5}{8}$ per Cent upon Silver; and the price of short Bills in return being Francs 25.10, it is required to find the Profit or Loss per Cent, allowing $\frac{1}{10}$ per Cent for Brokerage, and $\frac{1}{8}$ per Cent for loss of interest.

PRICES.

	LONDON.	PARIS.
Bar Gold	77 s 10½ d per Oz. St.	8½ per Mille pr.
Bar Silver	59⅞ d per Oz. St.	5 per Mille pr.
Doubloons	75 s 6 d per Oz.	Fr. 83.20 each.
Dollars	57¾ d per Oz.	895 Fine—5¼ per M. pr.

Ex. 2. From the following prices of Gold and Silver in London and Amsterdam, it is required to find the net arbitrated Pars of Exchange; and the Rate of Exchange for short Bills in return being Flor. 11.95, it is required to find the Profit or Loss per Cent, allowing the extra charges to be as before; viz. $\frac{1}{2}$ per Cent upon Gold, $\frac{5}{8}$ per Cent upon Silver, and $\frac{1}{10}$ for Brokerage, and $\frac{1}{8}$ per Cent for loss of interest upon the Bills.

PRICES

	LONDON.	AMSTERDAM.
Bar Gold	77 s 10½ d per Oz. St.	14½ per Ct. prem.
Bar Silver	59⅞ d per Oz. St.	Fl. 104.10 per Pond.
Doubloons	75 s 6 d per Oz.	865 Fine—14½ per Ct. pr.
Dollars	57¾ d per Oz.	Flor. 2.55 each.

Ex. 3. From the following prices of Gold and Silver at Hamburg, it is required to find the net arbitrated Par of Exchange, allowing for all extra charges ½ per Cent upon Gold, and ⅜ per Cent upon Silver; and the Rate of Exchange for Bills in return being Mks 13 8¾ Sc. it is required to find the Profit or Loss per Cent, allowing $\frac{1}{10}$ per Cent for Brokerage and ⅛ per Cent for loss of interest.

PRICES.

	LONDON.	HAMBURGH.
Bar Gold	77 s 10½ d per Oz. St.	442 Bo Mk per Col. Mk.
Bar Silver	59⅞ d per Oz. St.	Mks 27 11¾ Sc. per Mk.
Doubloons	75 s 6 d per Oz.	20 C. 9¼ Gr —442 per f. Mk.
Dollars	57¾ d per Oz.	14 L. 5½ Gr.—27 12 per Mk.

Ex. 4. From the following prices of Gold and Silver at Frankfort, it is required to find the net arbitrated Pars of Exchange, allowing for extra charges on Gold ⅜ per Cent, and on Silver ¾ per Cent; and the Rate of Exchange for Bills in return being 117 Florins per £ Sterling, it is required to find the Profit or Loss per Cent, allowing $\frac{1}{10}$ per Cent for Brokerage and ¾ per Cent for loss of interest.

PRICES.

	LONDON.	FRANKFORT.
Bar Gold	77 s 10½ d per Oz. St.	374 Flor. per Mk.
Bar Silver	59⅞ d per Oz. St.	Flor. 24 32 per Mk.
Dollars	57¾ d per Oz.	Flor. 2 31 K. each.

ARBITRATED PRICES

OF

BULLION.

An arbitrated price of Bullion is the rate or price of Gold or Silver in one country, as deduced from the price in another country.

The requisite data for calculations of arbitrated prices, are the same as for arbitrated Pars of Exchange, with the exception of substituting the Rate of Exchange instead of that price which is in the money of the country making the operation for arbitrated prices; there are therefore required, the price abroad, the Rate of Exchange at which either the cost is drawn for, or the proceeds of the sales are remitted for, with the relations between the weights and the degrees of fineness at which the prices are reckoned.

For these latter particulars, reference may be made to the explanations given, as introductions, to the places which have been selected as being the chief of those concerned in Bullion operations; and for estimating the per Centages of the differences in the prices, we may either take 1-100 th part of the given price for 1 per Cent; or taking Bar Gold at 80 s and Bar Silver at 60 d per Oz. Standard, it may be reckoned that the variation of 6 d per Oz. in Gold makes a difference of 5-8 ths per Cent; and 3 d per Oz. in Silver, a difference of 5 per Cent.

Taking also the same estimated values as being sufficiently accurate for the purpose of allowing for the charges, we may call for,

		Bar Gold.			Bar Silver.		
		Shill.		Pence.	Pence.		Eighths.
$\frac{1}{8}$	per Cent.	0.1	or	1.2	0.075	or	0.6
$\frac{1}{4}$	—	0.2	-	2.4	0.150	-	1.2
$\frac{3}{8}$	—	0.3	-	3.6	0.225	-	1.8
$\frac{1}{2}$	—	0.4	-	4.8	0.300	-	2.4
$\frac{5}{8}$	—	0.5	-	6.0	0.375	-	3.0
$\frac{3}{4}$	—	0.6	-	7.2	0.450	-	3.6
$\frac{7}{8}$	—	0.7	-	8.4	0.525	-	4.2
1	—	0.8	-	9.6	0.600	-	4 8

ARBITRATED PRICES.

PARIS AND LONDON.

BAR GOLD.	BAR SILVER.
Premium per Mille 4½	Premium per Mille 4
Rate of Exchange 25.20	Rate of Exchange 25.20

		1	Oz. St. ?		1	Oz. St. ?
1	—	31.1002	Gram.	1 —	31.1002	Gram.
1000	—	3151.30	Francs.	100 0 —	203.50	Francs.
1000	—	* 1004½	Pr. incl.	1000 —	* 1004	Pr. incl.
25.20*	—	20	Shillings.	25.20* —	240	Pence.

```
25.20 ) 1960 12   Fixed No.        25.20 ) 1518 93   Fixed No.

        77.782                             60.251
           311    4 per Mille.                241    4 per M.
            39    ½ —  —
                                        d 60.49
       s 78.132

       d 1.584
```

Result, s 78 1½ d per Oz.   Result 60½ d per Oz.

Fixed Numbers for Rates of Exchange.

Rates.		Bar Gold.	Bar Silver.
Fr. 25 00 Cents		78.405	60.757
05	.	- 248	- 636
10	.	- 092	- 515
15	.	77.937	- 395
20	.	- 782	- 275
25	.	- 629	- 156
30	.	- 475	- 036
35	.	- 322	59.919
40	.	- 170	- 800
45	.	- 018	- 683
50	.	76.867	- 566
55	.	- 717	- 449
60	.	- 567	- 333

ARBITRATED PRICES.

AMSTERDAM AND LONDON.

BAR GOLD.			BAR SILVER.		
Premium per Ct.	14		Price per Pond.	103¾	
Rate of Exchange	12.10		Rate of Exchange	12.10	

	1	Oz. St. ?			1	Oz. St. ?
12 —	11	Fine.		40 —	37	Fine.
1 — 31.1002		Wigties.		1 — 31.1002		Wigties.
1000 — 1442.60		Florins.		1000 —	* 103¾	Florins.
100 — *	114	Pr. incl.		12.10* —	240	Pence.
12.10* —	20	Shillings.				

12.10) 822527	Fixed No.		12.10) 690424	Fixed No.
67977			5706	
6797	10 per Ct.		171	for 3 Flor.
2719	4 —		43	- ¾ -
s 77.493			d 59.20	
d 5.916				

Result, s 77 5 ⁹⁄₁₀ d per Oz.   Result, 59½ Pence per Oz.

Fixed Numbers for Rates of Exchange.

Rates.		Bar Gold.	Bar Silver.
Flor. 11 80 Cents	.	69706	58511
85	. .	- 412	- 264
90	. .	- 120	- 019
95	. .	68831	57776
12 00	. .	- 544	- 535
05	. .	- 260	- 297
10	. .	67978	- 060
15	. .	- 698	56825
20	. .	- 420	- 592
25	. .	- 145	- 361

ARBITRATED PRICES.

HAMBURG AND LONDON.

BAR GOLD.	BAR SILVER.
Price per Fine Mark 438	Price per Maik 27 11
Rate of Exchange 13 10½	Rate of Exchange 13 10½

		1 Oz. St ?		1 Oz. St.
82	—	10 C.Mk Fine	$65-\frac{1}{11}$ —	8 Maiks F.
1	— * 438	Bco Mks	1 — * 27 11	M.& Sc.
13 10½	—	20 Shillings	13 10½ * —	210 Pence.

$13\frac{21}{44}$) 2 43902 Fixed No.		$13\frac{21}{42}$) 295343	Fixed No.

0.17860	½ - 21627
440	27

7.144	583929 for 27 Mks
71.44	- 10813 - 8 Sc.
	- 2703 - 2 -
s 78.584	1351 - 1 -

d 7.008	d 59 8796

Result, 78 s 7 d per Oz.	Result, 59⅞ Pence per Oz.

Fixed Numbers for Rates of Exchange.

Rates.	Bar Gold.	Bar Silver
Mks 13 6 Sc. .	18236 .	. 22082
- 7 . .	151 .	. 21979
- 8 . .	067 .	. 877
- 9 . .	17983 .	. 776
- 10 . .	901 .	. 676
- 11 . .	819 .	. 578
- 12 . .	738 .	. 480

ARBITRATED PRICES.

FRANKFORT AND LONDON.

BAR GOLD.				BAR SILVER.			
Price per Mark		372		Price per Mark		24 32	
Rate of Exchange		117		Rate of Exchange		117	

		1	Oz. St. ?			1	Oz. St. ?
12	—	11	Fine.	40	—	37	Fine.
1	—	480	Grains.	1	—	480	Grains.
3609	—	*372	Florins.	3609	—	* 24 32	Flo & Kr.
117*	—	10	£.	117*	—	10	£.
1	—	20	Shillings.	1	—	240	Pence.

117) 243835 Fixed No.   117) 29526 Fixed No.

            20841   25235

              372

          s 77.525   60564 for 24 Fl.
                                        126 - 30 Kr.
          d 6.300   5 - 2 —

                                     d 60.695

Result, 77 s 6$\frac{3}{10}$ d per Oz.   Result, 60$\frac{6}{8}$ d per Oz.

Fixed Numbers for Rates of Exchange.

Rates.			Bar Gold.			Bar Silver.
116	.	.	21020		.	25453
— $\frac{1}{2}$	.		20930	.		344
117	.	.	841	.		235
— $\frac{1}{2}$	.		752	.	.	126
118	.	.	663	.	.	023
— $\frac{1}{2}$	.		573	.	.	24918
119	.	.	490	.	.	811
— $\frac{1}{2}$	.		405	.	.	708
120	.	.	310	.	.	605
— $\frac{1}{2}$	.	.	235	.		500

ARBITRATED PRICES.

ST. PETERSBURG AND LONDON.

The Price of Fine Gold is fixed at 355 Silver Rubles per Solotnick, and that of Fine Silver at 22¾ Silver Rubles per Pound.

N.B.—Gold bears a premium of 3 per cent. on Silver, 100 Gold Rubles equal to 103 Silver Rubles.

GOLD.

	1	Oz. St. ?
12	—	11	Fine.
1	—	480	Grains.
6319.96	—	96	Solot.
100	—	355	S. Rubles.
1	—	*37½	Pence.
12	—	1	Shilling.
197723 Fixed Number.

Result, 74 s 1.75 d per Oz.

SILVER.

	1	Oz. St ?
40	—	37	Fine.
1	—	480	Grains.
6819.96	—	1	Pound.
1	—	22¾	S. Rubles.
1	—	*37½	Pence.
159827 Fixed Number.

Result, 59.935 d per Oz.

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(*) Moneys, Weights, Measures, Pars of Exchange, and Courses of Exchange.

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